

Case Study: The Transformation of the Health Record; The Impact of Electronic Medical
Records in a Military Treatment Facility

A Graduate Management Project

Submitted to the Faculty of U.S. Army-Baylor University

By

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Abstract

This research project utilized the qualitative case study method to describe the process, problems, and results of the implementation of the electronic medical record in a large military medical center from the medical record department's perspective. Much has been written on the need for an electronic medical record to improve efficiency and safety in patient care. However, there is minimal information on actual implementation processes and their outcomes. This project benchmarked the medical records department and provides a summary of how it did business before the electronic medical record, and chronicled the transformation that occurred with the implementation of the electronic medical record. The research question for this study was "how will the transformation of the health record from paper to electrons impact the medical records administration in a large military medical center?"

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Introduction

Conditions That Prompted the Study

Naval Medical Center San Diego (NMCSD) is deploying the Armed Forces Health Longitudinal Technology Application (AHLTA) formerly known as the Composite Health Care System (CHCS II), and is working towards utilizing the military health system's version of the electronic medical record (EMR). AHLTA deployment began January 2005 and is currently at 90% utilization. This new enterprise-wide information system will offer military health system providers with a real-time, secure, comprehensive, and accessible longitudinal outpatient health record in support of more than 9 million eligible beneficiaries. As the EMR deployment progresses the NMCSD leadership is presented with the challenge of understanding the impact this application will have on how business is conducted.

Implementation of an electronic medical record will bring significant changes to the way health information is managed. Military health records are currently paper-based and their handling and administration is guided by written policy. However, clear policies and direction from higher authority on the transformation of the medical record from paper to electrons are lacking. As the military health care system transitions to an EMR, facility commanders must implement and manage policies to address the record's change from paper to a combination of paper and electronic records, or hybrid medical records and eventually a full electronic record. Enterprise-wide implementation of an automated, electronic health record system will change the manpower, facility, and resource requirements of military treatment facilities. Commanders must ensure that their organizations are well positioned to capitalize on the benefits of the EMR or AHLTA may result in nothing more than additional work and expense to the Military Health System. NMCSD is an early adopter of the electronic medical record and is well situated to

provide useful lessons to other organizations that are faced with implementing electronic medical records.

AHLTA will change the way health information is managed at NMCS D and other military treatment facilities. During the implementation of AHLTA the Information Technology Management Department oversees the deployment and is viewed as the subject matter experts for the AHLTA system. As the implementation phase ends, there will be a transition from deployment to sustainment. Limited guidance exists on how the EMR will be sustained and which department will have the responsibility for the EMR.

AHLTA is a longitudinal health record and historically health records belong to patient administration departments. However, it is not yet clear what changes to manpower, facility, policies, and other resource requirements must be made to capitalize on the benefits of the EMR. Until these changes are clearly defined, it is unclear which department within the MTF should take responsibility for managing the AHLTA system.

Background of NMCS D

Naval Medical Center San Diego (NMCS D) has a long and distinguished history in the San Diego area. Naval medical missions in this area began as early as 1914 when a field hospital was established in Balboa Park to support the Marine Corps. The first Navy medical facility in San Diego was established during World War I and in 1917 it was officially designated as United States Naval Hospital San Diego. Since then, the Naval Medical Center has provided crucial medical care to our nation's war fighters during every major military campaign.

The current state-of-the-art facility was built in 1988. NMCS D has an eligible beneficiary population of nearly 500,000 service members and dependents and a staff of approximately 6000 military, civil service, and contract personnel. The hospital compound

encompasses 79 acres and was built with a bed capacity of 539. There are currently 265 active beds at the facility and average daily inpatient census is 200 patients. The medical center averages 3,698 outpatient visits a day and has a regional economic impact of \$400 million. In addition to the main hospital campus, the hospital provides care at nine outpatient clinics throughout the San Diego area (NMCSO website).

In addition to providing health care to eligible beneficiaries, the medical center is a major teaching and research center. The hospital is active in graduate medical education programs in anesthesiology, dermatology, emergency medicine, general surgery, internal medicine, obstetrics-gynecology, ophthalmology, otolaryngology, orthopedics, pathology, pediatrics, psychiatry, psychology, radiology, urology, general practice dentistry, oral and maxillofacial surgery, nurse anesthesia, and hospital pharmacy. Additionally, the hospital offers fellowships in adolescent medicine, cardiology, critical care, computerized tomography and imaging, dermatology, gastroenterology, hematology-oncology, infectious disease, nephrology, and pulmonary disease. To accomplish this quality training the hospital has affiliations with many prestigious organizations throughout the U.S. These affiliations include the University of California San Diego, Children's Hospital and Health Center, Scripps Clinic and Research Foundation, La Jolla. These relationships enable Navy medicine students to receive the best possible training in order to carry out the hospital's mission of supporting the war fighter, their families, retirees, and all other eligible beneficiaries (NMCSO website).

The Research Question

How will the transformation of the health record from paper to electrons impact medical records administration in a large military medical center?

Literature Review

State of American Health Care System

The American health care system is in a constant state of change and struggles with the issues of health care cost, access, and quality. National health expenditures have increased nearly 10% each decade between 1960 and 2003 (National Center for Health Statistics, 2005). Expenditures on health have grown from \$26.7 billion in 1960 to \$1,678.9 billion in 2003 (National Center for Health Statistics). Over the next ten years, the percent of the Gross Domestic Product spent on U.S. health care is expected to rise from 15.3 percent to 18.7 percent (National Coalition on Health Care, 2005).

Similar to the civilian sector, the Military Health System is also faced with the rising costs of health care. In a letter to all military medicine beneficiaries, the Deputy Director and Program Executive Officer of the TRICARE Management Activity indicated that the cost of healthcare has doubled in the last five years (Office of the Assistant Secretary of Defense, 2006). According to Brigadier General Elder Granger there will be severe increases over the next 10 years totaling \$64 billion in 2015, which will be 12 percent of the projected Defense budget for that year (Office of the Assistant Secretary of Defense).

As the cost of care in the U.S. has risen, access to care for many Americans has declined significantly. The number of uninsured in America continues to rise every year. According to the U.S. Census Bureau the number of uninsured rose to 15.6 percent of the population or 45 million Americans in 2003 (Longley, 2004). The Center on Budget and Policy Priorities (2005), reports that the number of uninsured in 2000 was 39.8 million or 14.2% of the population. The uninsured are less likely to see a physician at the onset of an illness. Shi and Singh (2004) note that being uninsured has a negative impact on the health status. According to the Kaiser

Commission on Medicaid and the Uninsured (2003), having health insurance impacts access to health care. The Kaiser Commission indicates that more than 40% of the nonelderly uninsured adults do not regularly access health care even when they know they needed it. Shi and Singh note that in cases where the uninsured do have access to care, they have difficulty in paying their medical bills. In many instances the patients wait too long and problems that could have been treated early and effectively are allowed to become much worse. When an uninsured patient finally does access the system their condition is advanced and more difficult and expensive to treat.

The Institute of Medicine's *To Err is Human* report on health care quality found that care in the U.S. was not as safe as it should be. They indicated that in many cases, health care is "decentralized and fragmented..." which is a significant contributor to the quality problem. The report pointed out that when different providers within a system see patients the providers are often missing relevant information. When providers have incomplete information on their patients the chances of negative health care outcomes are increased (Institute of Medicine, 1999).

Electronic Medical Records Can Help

Widespread use of electronic medical records can lower the cost of health care and improve quality in the form of improved efficiency and safety. Hillstad et al. (2005) estimated that U.S. health system adoption of an electronic medical record could provide significant improvements in health, safety, and efficiency and concluded that EMRs could eventually save more than \$81 billion annually. They suggest that information technology used in prevention and chronic disease management could some day double savings and improve health. Wang, Blackford, Middleton, Prosser et al. (2003) concluded that implementation of an electronic medical record for primary care would realize a positive return on investment. This study

examined the cost per primary care provider for a 5-year period and found that over this time a net benefit of \$86,000 per provider. However, the return on investment was sensitive to the proportion of capitated patients. In “a five-way sensitivity analysis with the most pessimistic and optimistic assumptions showed results ranging from a \$2300 net cost to a \$330,900 net benefit” (2003, p 397). Electronic Medical Records would lower costs by eliminating duplicated labs, prescriptions, and other orders and allow health care providers more time to focus on the patient and make better informed decisions with access to more complete and accurate data.

In their report on American health care quality, *Crossing the Quality Chasm*, the Institute of Medicine espoused the importance of developing an information technology infrastructure to improve the safety, quality, and efficiency of health care (Institute of Medicine, 2001).

Proponents speculate that electronic medical records can improve clinical workflow, facilitate healthcare metric collection, and provide decision makers with quality data on which to base population health and policy decisions. Garrido, Jamieson, Zhou, Wiesenthal, and Liang, (2005) found that the use of an EMR by two separate Kaiser Permanente healthcare delivery systems resulted in decreased ambulatory usage and allowed more efficient use of telephone consults. Garrido et al. suggest that the EMR eliminated unnecessary ambulatory visits in both regions. Reducing misuse of the health care system can have a significant impact on quality by allowing providers to better focus on the patients that need care.

The need for electronic health records gained the attention of many Americans during the 2004 Presidential election. In his State of the Union address in January 2004, President George W. Bush indicated that in order to save money and improve safety there will need to be a national focus on electronic health records over the next ten years (Bush, 2004). As the electronic medical record's importance to health care is acknowledged, the Department of

Defense is well situated to take the lead. This is because the military health system has long recognized the importance and value of leveraging technology to improve patient care, safety, and efficiency in health care.

Background of Health Information Technology in the Military Health System

The need to develop a more comprehensive, longitudinal electronic medical record for military health system beneficiaries was highlighted by the 1991 Gulf War. As a result of service member health problems related to the Gulf War and recognizing the government's duty to take care of these members, President Clinton established the Presidential Advisory Committee on Gulf War Illnesses on May 26, 1995 with Executive Order 12961 (Riley, 2003). The committee was tasked with providing a thorough study on how governmental agencies were addressing the health issues related to duty in the Gulf War (Riley, 2003). The final report on this study was issued on December 31, 1996(Riley, 2003). The committee delivered recommendations on how the government could meet its obligation to our troops. Among these recommendations was the need for improvements in health information management (NSTC-PRD 5). The committee highlighted the need for a system that records patient health history and delivers complete, comprehensive, and timely information to health care providers regardless of where they are located (NSTC-PRD 5). The National Science and Technology Council Presidential Review Directive 5 (1998), report emphasized the importance of an enterprise-wide, integrated computer-based patient record system that tracks health data and is available worldwide (NSTC-PRD 5).

The Composite Health Care System, or CHCS I, has been utilized by the military health system for over a decade. The original CHCS is a Computerized Order Entry system and has been deployed in the military health system since 1990 (CITPO, 2005). Healthcare providers

have been utilizing this system to register patients, schedule appointments, and order laboratory requests, radiological requests, and prescriptions (CITPO). Doctor order entry laboratory requests and prescriptions significantly impacted the safety and effectiveness of military health care (Charles, Harmon, and Jordan, 2005). This impact on safety was achieved from many safeguards including reducing transcription errors and prescribing errors (Charles, Harmon, and Jordan). One major drawback of CHCS is that it is essentially a stand-alone system at each military treatment facility. When a patient transfers from one facility to another, their CHCS data are not accessible at the new facility.

Naval Medical Center San Diego began deploying AHLTA in January 2005 and is approaching full implementation. The military health system's lead agency for AHLTA deployment is the Clinical Information Technology Program Office (CITPO, 2005). CITPO was created to replace the individual information technology efforts of the three branches of the service (CITPO, 2005). This organization is responsible for managing the clinical information technology issues as they pertain to improving healthcare outcomes. According to CITPO (2005), AHLTA is being deployed in blocks that increase the systems capabilities with each build. This method of deployment is used to maximize the benefit of evolving technology and changing user requirements. The current deployment is block one, which provides the initial platform for patient encounter information to be documented. At this time the AHLTA contains only outpatient encounters but future blocks of AHLTA will provide dental documentation, and clinical practice guideline capabilities, ancillary services, and inpatient documentation (CITPO, 2005). According to CITPO, AHLTA is used by "82 of the 140 parent MTFs, with almost 36,000 trained users documenting more than 250,000 patient encounters each week. Data has been entered on 7.26 million beneficiaries" as of December 2005 (CITPO). According to the Office of

the Assistant Secretary of Defense (Health Affairs) and the TRICARE Management Activity AHLTA information website, the Department of Defense will have completed the implementation of AHLTA by 2011 (TMA, 2005). This study will focus on the implementation of block one, the outpatient EMR.

EMR Implementation Challenges

The deployment of AHLTA and the transformation of the medical record present many challenges for hospital personnel. As AHLTA implementation phase winds down and transitions from deployment to sustainment phase at NMCS D, several questions remain unanswered. After deployment, how will the EMR be maintained? There is limited guidance on how the EMR will be managed at the facility level and which department(s) will have the responsibility for the EMR. What changes to manpower, facility, and existing policies must be made to capitalize on the benefits of the EMR? To obtain maximum benefit from the electronic health record, the processes and policies of the paper-based health record must be realigned during the implementation and maintenance phases. Examination of the required resources, to include staffing, equipment, facilities, and policies will facilitate the determination of the future state of medical record administration.

Not all of the Military Health System's facilities are using AHLTA. It will be some time before AHLTA is completely deployed within the MHS worldwide. Many overseas hospitals and operational units do not have access to AHLTA and must rely on paper-based records. How will administrators insure that the complete patient information is maintained for all patients? In the absence of clear guidance, NMCS D has been printing EMR encounters and filing them in the outpatient medical record of active duty patients not attached to the medical center. The multiple screens and information pages that compose AHLTA's robust electronic record are not designed

to be printed. If the record must be printed, what used to be one-page of information is three-pages of ALTHA printouts.

Additionally, the issue of record retirement has not been addressed. NPRC is the Department of Defense's authority on personnel records handling procedures. To date, the NPRC has not issued guidance on how the implementation of the EMR will factor into medical record retirement. Currently a beneficiary's record that is inactive for 3 years (5 years in a training hospital) is retired to the National Personnel Record Center (NPRC). The current NPRC policy requires that a paper medical record be complete prior to transfer to NPRC for retirement. A complete record contains all medical encounters and tests. During the transition from paper record to AHLTA many of these encounters and tests are accounted for in the AHLTA system but not in print. Managing a hybrid medical record without changing current policies will result in a significant increase in workload for the patient administration department. The electronic health record is intended to reduce paper records and increase efficiency. However, if medical records personnel are required to transfer records in paper form, the EMR will result in more paper and add additional workload to the administrative staff.

Purpose

This project examined Naval Medical Center San Diego Health Records administration to understand how EMR implementation impacted the administration of health records throughout the hospital. Enterprise-wide implementation of an automated, electronic health record system will change the manpower, facility, and resource requirements of military treatment facilities. To obtain maximum benefit from the electronic health record, the processes and policies of the paper-based health record must be realigned during the implementation and maintenance phases.

This case study explored the manner in which health records are maintained and administered during the implementation of the electronic health record. Examination of the required resources, to include staffing, equipment, facilities, and policies, will facilitate the determination of the future state of medical record administration

Methods and Procedures

This research project utilized the qualitative case study method to describe the process, problems, and results of the implementation of the electronic health record and the impact on the Patient Administration department. Patient Administration is responsible for writing medical record policies for the command and maintains the outpatient records of the facility. The intent of this project was to examine the Patient Administration Department, provide a summary of how medical records were handled before AHLTA, discuss the implementation of AHLTA and chronicle the impact of AHLTA on health record management. This study accomplished the following:

- Background about AHLTA and its deployment at NMCS D
- Documented changes to medical record work processes with AHLTA deployment.
- Examined required resource changes within Patient Administration to include:
manpower, equipment, and facility impacts.
- Identified policies that need to be changed both internally and external to NMCS D (e.g., record retirement procedures).
- Provided lessons learned from a large tertiary hospital on the transition from paper to electronic health records.

The case study method was selected to provide the framework for examining this problem. In the General Accounting Office publication "Case Study Evaluations" (1990, p. 15) a case study is defined as a "...method for learning about a complex instance based on a comprehensive understanding of that instance obtained by extensive description and analysis of that instance taken as a whole in its context." Applying the above definition to this problem, the military health system and its diverse variety of beneficiary groups and unique operational requirements present complex questions as to how the MHS handles the health record of the future.

In order to completely understand this complexity, a comprehensive picture of what occurred and the reasons why must be obtained. This comprehensive picture was obtained through extensive analysis. According to the GAO (1990), the methodology for this technique is to examine data from multiple types of sources. These sources include interviews with the stakeholders, "observations over time, participant observation, documents, archives, and physical information" (GAO, 1990, p 20).

This collected information in several ways. Documents such as contracts, implementation schedules, memorandums, reports, and meeting minutes were obtained and used to gather information. In this study, the researcher interviewed stakeholders such as department heads, section leaders, and key personnel involved with AHLTA implementation and medical record administration. Open-ended and focused interviews were performed to obtain an understanding of the issues and concerns among the EMR stakeholders. Direct observations of current processes and workflow were made and recorded in detail to preserve the information and assist with recall.

In addition to understanding the whole picture, the context of the issue must be documented. To gain a clear view of what happened and why, it is important that the context (i.e., the medical environment) be sufficiently clarified. In their book, *EMR Implementation* (2005), Carolyn Hartley and Edward D. Jones, stress the importance of understanding and documenting the workflow in the medical practice when implementing the EMR. They point out that if the EMR stakeholders do not understand the current medical record process, they will not be able to understand how an EMR will benefit the organization. This study recorded the processes involved with medical record administration to include detailed examination of the workflow of the paper-based medical record from the time it is requested until it is returned to the records room.

Reliability

Mays and Pope (1995), indicate that in order to ensure “rigor” in qualitative studies, standardized and disciplined “research design, data collection, interpretation, and communication” must be achieved (p 2). They indicate that qualitative researchers should focus on designing a method and gathering data that will allow another researcher to use the same data and arrive at the same conclusions. The method used to ensure reliability of this analysis was careful documentation of conversations, observations, and the process of obtaining them in great detail. In carefully recording and preserving this material the researcher has provided adequate re-test reliability.

Validity

Validity in a study refers to the accuracy of the measure in relation to what it is trying to achieve. Joppe (2000) indicates that validity asks if the research method “strikes the bull’s eye of your research focus?” A valid study will adequately answer the question it seeks to answer. The

Government Accounting Office (GAO) indicates that there are two methods used in case studies for ensuring validity. These methods are multiple sources of evidence and chain-of-evidence technique (1990, p 63). Multiple sources of evidence addresses the need for case studies to obtain detailed and comprehensive descriptions in order to have the information required to check for trends, rule out competing explanations, and corroborate findings (GAO, 1990, p 63).

Chain of evidence addresses the sequence from observations to conclusions. A study with a strong chain of evidence will allow another researcher to follow the original observations through the study methods and arrive at the same conclusions. Accurate and concise documentation of data is essential in achieving chain-of-evidence validity (GAO, 1990).

The time frame of this study was from October 2005 to June 2006. Implementation of the AHLTA outpatient module at NMCS D began January 2005 and was completed by December 2005. Scheduled research time, membership in key AHLTA working groups, and attending regular meetings with stakeholders has given the researcher the information required to complete this study.

The implementation of an EMR should demonstrate a positive impact on cost, access, and quality. The impact of AHLTA should allow the Military Health System to better perform its mission. When determining if changes to work processes are good or bad, the researcher sought to find a measurable impact on the constructs of cost, access, and quality as they relate to health record administration. Understanding and evaluating these impacts guided the conclusive sections of this project and assisted with recommending a process to others.

Ethical Considerations

Information and data utilized in this study did not have identifiable patient information.

Findings

Provide background about AHLTA and its deployment at NMCSD

NMCSD began planning for AHLTA in January 2004 and started implementing AHLTA in January 2005. A multidisciplinary team composed of stakeholders from different clinical and administrative areas of the hospital was created to guide the implementation. This team reported to the hospital's Executive Leadership Committee and was the mechanism for sharing information and disseminating guidelines for training and preparation for the implementation. The team was led by co-chairmen: the hospital's Information Technology Department (ITMD) department head and a physician clinical champion. This leadership configuration, combined with the synergistic team of hospital stakeholders, ensured that all areas of the hospital were represented in AHLTA planning.

The Implementation Team decided that AHLTA deployment within the hospital would occur in the specialty clinics first and then deploy to the primary care clinics. This order of deployment had several advantages. One advantage was that primary care providers would find the system more valuable if they could see the health information on the patients that they had referred (Linda Keith, 2005). Another benefit of deploying AHLTA to the specialty providers first was that these providers have more time for patient appointments than primary care providers. The schedule of deployment can be found in appendix (a).

AHLTA Training

Training was provided by contract personnel from Uniysis and funded by CITPO. CITPO provided these trainers to the command for a period of 9 months. In order to minimize interruption to patient care and facilitate successful implementation of AHLTA the deployment was conducted one clinic at a time. During the training period the clinics did not have patient appointments scheduled. Additionally, providers were relieved of many of their normal

administrative duties. The clinic support staff received two days of training and then the clinic's providers were trained for two days. Clinic nursing staff received one six-hour session of training. During the training and implementation period, the training was modified at the clinic leadership's request as needed. After the initial training, clinic operations were scaled back and appointment templates were reduced for five weeks from the beginning of training (AHLTA Training Guidelines). During this period, providers used AHLTA in a live setting while seeing one patient every hour. The number of patients seen per hour was increased to pre-implementation levels over several weeks as provider competence and comfort with AHLTA progressed (Keith, 2006).

Business and Clinical Transformation Activities

In order to effectively leverage the AHLTA system it is essential to realign clinical and business practices. In an effort to help clinic personnel in assessing their processes and effectively integrate AHLTA into their clinics the hospital conducted business reengineering activities. The "Clinical and Business Transformation Team", a sub group of the Implementation team, assisted clinics with Business Process Reengineering before, during, and after AHLTA implementation. This team worked with clinic staff to review and document the clinic's workflow processes prior to AHLTA implementation. Once a clear understanding of the current state was obtained the business process reengineering team reviewed the processes and worked with clinic staff to identify and set future goals for improvement to their business methods. When setting goals for implementation and process improvement the team carefully documented what they hoped to achieve and their assumptions. Once the goals and assumptions were documented the team was able to identify and record the future state of the clinical work processes under the AHLTA system.

AHLTA Sustainment & Transformation Working Group; Electronic Medical Record Working Group

In September 2005, nine months into implementation, the focus on AHLTA transitioned from implementation to sustainment. The hospital leadership directed the dissolution of the AHLTA Implementation Team and the creation of the AHLTA Sustainment & Transformation Working Group. The AHLTA Sustainment & Transformation Working Group was charged with developing timely and effective processes for the hospital as AHLTA moved from implementation to sustainment. This group was charged with creating or modifying processes within the hospital that would “meet or exceed the expectation of patients and staff, and that can serve as a model for other commands within Navy Medicine West” (Naval Medical Center, San Diego CHCS II Sustainment & Transformation Working Group Charter, 2005). The working group was given a variety of tasks dealing with AHLTA use and integration. The group was tasked with developing command policy for EMR management and had EMR oversight responsibility. This task led to the creation of the Electronic Medical Record Working Group.

The EMR working group was created as a sub-group of the AHLTA Sustainment and Transformation Group. This working group was tasked with identifying the manner in which the EMR was to be maintained at the facility. The working group’s focus was to examine the requirements of the EMR to include daily maintenance functions, HIPPA privacy and security measures, development of policies, identifying required compliance reports, drafting procedures to ensure complete records, record retirement, handling loose medical record forms and acting as a resource to clinics as part of the business assist visits. Additionally, the working group was tasked with identifying the anticipated resource requirements of an EMR office. The group held bi-monthly meetings and was headed by the Patient Administration Officer.

Patient Administration Department

Because of their role in several key areas of patient care, the patient administration department is a key player in the hospital's mission. This department is responsible for the administrative needs of all NMCS D patients. These needs include the admission and disposition of inpatients, maintenance of inpatient and outpatient medical treatment records, maintaining personnel management responsibility for active duty patients, and providing counseling for patients regarding disability benefit options. Additionally, the department handles decedent affairs, medical evacuations, and medical boards. The department's annual budget is more than \$8.3 million. In Fiscal Year 2005 the department spent \$1,761,125 in personnel contracts \$6,209,421 for civil service personnel, \$11,241 on maintenance and service contracts and \$319,660 on consumables (DMLSS and Non-DMLSS). (Nau, 2006).

Perhaps the most important role in the PAD department is the maintenance of the medical record. The medical record is an integral part of patient care and impacts nearly every facet of the PAD's responsibilities. Within the Patient Administration Department, the area that is most impacted by block one of the AHLTA deployment is the Outpatient Medical Records Branch.

The Outpatient Records Branch is responsible for the proper maintenance of the outpatient health record. This responsibility includes sorting, filing, various labs, reports, tests, and consults in the military health record. This branch is also responsible for the daily delivery and pick up of health records from the outpatient clinics. Record transfer, personal health information disclosure, and health record retirement are also carried out by the Outpatient Records Branch.

Document Changes to Medical Record Work Processes after AHLTA Deployment

To ensure clarity of their medical record processes the EMR working group documented the common functions of the outpatient medical records branch. The following maps provide illustrative view of paper-based medical record handling procedures and aided in identifying the areas in which efficiencies could be found utilizing the EMR.

Figure 1. Paper-Based Medical Record Process

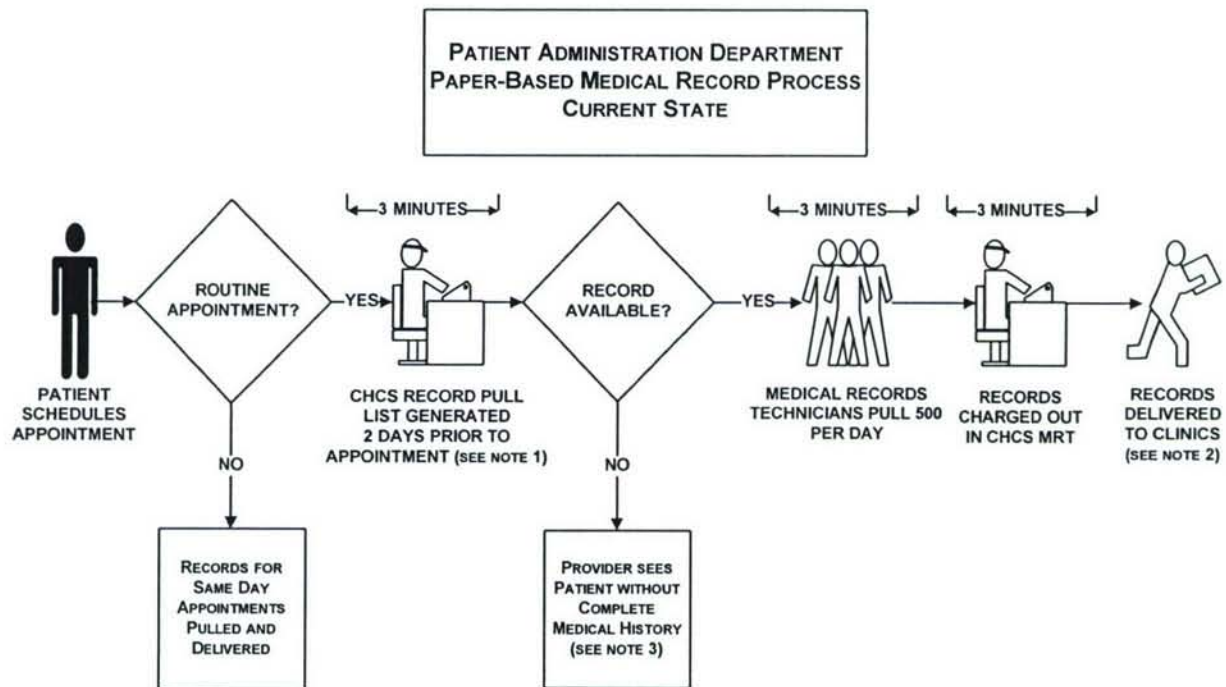


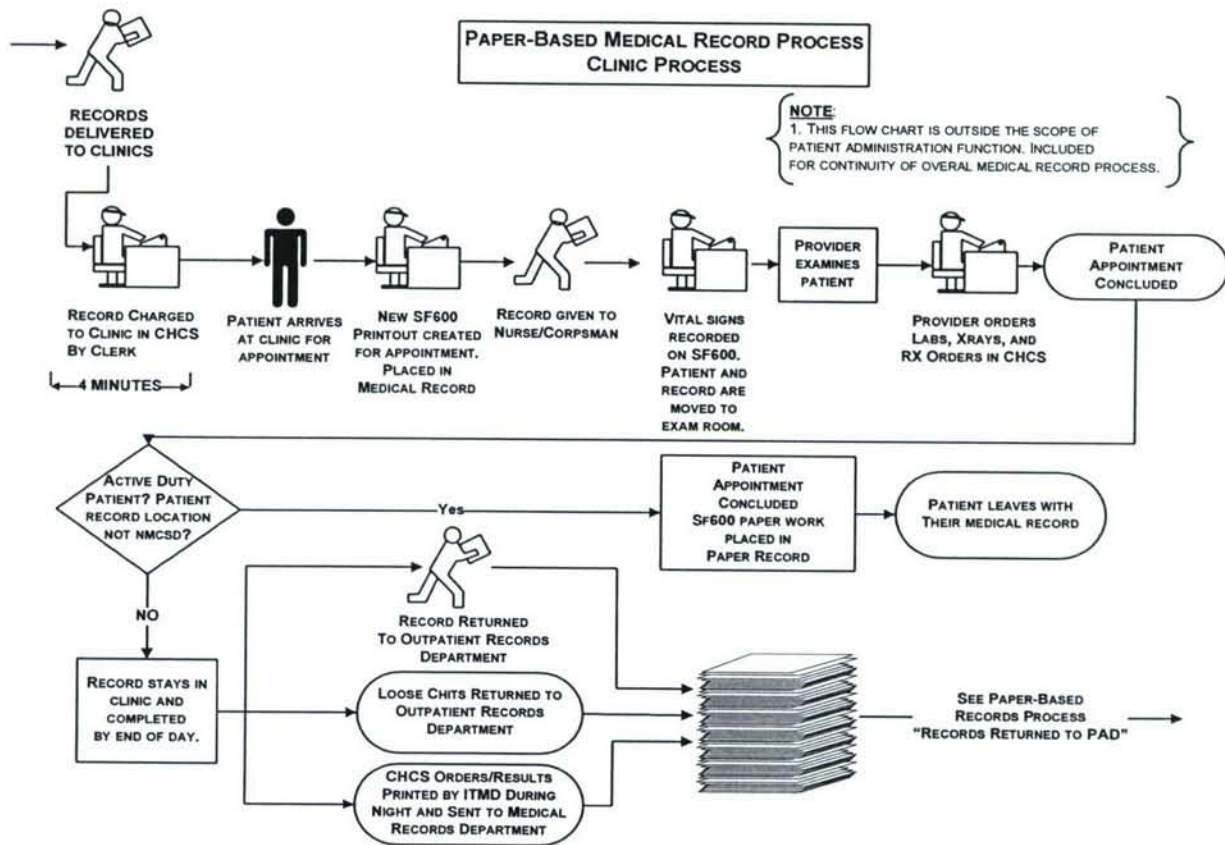
Figure 1 is a simplified overview of the paper-based medical record process in the Patient Administration department. For routine medical appointments records are delivered to requesting clinics the day of the patient appointment. The Patient Administration department utilizes CHCS to generate a pull list of required medical records two days prior to the appointment. The pull list is printed in the morning and averages 500 records per week day. The list is filled by 2-3 personnel (dependent on list size) and delivered by three personnel. When delivering the medical records, the medical records staff must wait on the clinic staff to accept custody of the records in

CHCS' MRT module. This change of custody in CHCS is performed when the records are dropped off and when they are picked up. Delivery and retrieval of paper-based medical records keeps three personnel busy for the entire day during normal operating hours (Weir, 2006).

According to the Medical Records Supervisor and the hospital business process team, the average time to pull a patient record is 3 minutes. Although many of the records take much less time to pull, some records require research by the technician and in some cases retrieval from archive locations outside of the main records room (Weir, 2006).

Delivery of the medical records to the clinics is a time consuming process. Problems with the paper-based medical record include missing records (average 1000 per month), damaged or incomplete records, a single record needed in several departments, and the fact that paper-based medical records do not lend themselves to efficient data retrieval for management reports and/or decision making tools.

Figure 2. Paper-Based Medical Record Process in Clinic



The paper based medical record process within the clinic is outlined in Figure 2 above. The paper-based medical records changes hands many times within the clinic and are of significant impact on the clinic's manpower resources. Prior to AHLTA, approximately 55% of outpatient medical records were maintained at NMCS's main hospital while the other 45% are located at the ten branch Primary Care clinics around San Diego. Many of the records that are located at the Primary Care Clinics are not available to specialty care clinic appointments at the hospital (Darnell, 2005). Many patients were being seen by providers that did not possess the complete medical history. Additionally, the loose chits and medical documents that are created at these specialty appointments can take months to finally get filed into the paper health record

(Darnell, 2005). Many specialty appointments that are seen without complete records return for follow-up records and the paperwork from the initial appointment is not available.

To deal with missing health information, many clinics maintain duplicate health records or “shadow” or “convenience” files on their patients. These additional records create added burden to the clinic support staff and its resources. According to Kevin Darnell (2005), the Business Process Reengineering Facilitator, many NMCS D clinics maintain shadow or convenience files. All of this additional paperwork is under control of the respective clinic and is not maintained by the Patient Administration Department.

The implementation of AHLTA allows clinics to redesign their processes and improves access to data when and where it is needed. AHLTA will reduce and eventually eliminate the occurrence of providers seeing patients with missing or incomplete records. As previously mentioned, incomplete and missing health information is detrimental to quality health care.

Figure 3. Paper-Based Medical Record Process “Records Returned to PAD”

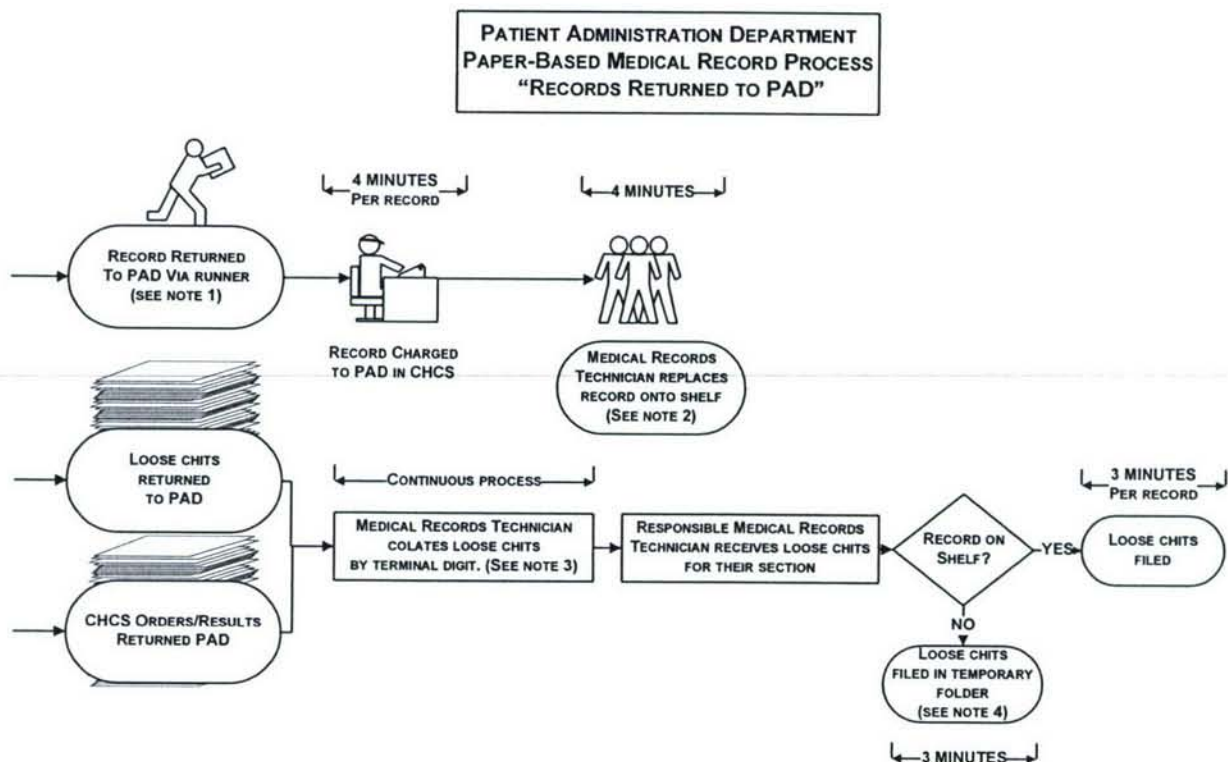


Figure 3 documents the paper-based health record as it is returned to the patient administration department. Health records are retrieved from the clinics via the three runners (one for each building) three times a day. The records are charged out of CHCS Medical Record Tracking module and received by the patient administration runner. The runner returns with the records and uses CHCS to transfer the records back to Patient Administration in the Medical Record Tracking menu. After the records are returned in the computer system, the records are filed by nine medical records personnel during the hours of 0630 and 1430. Patient Administration files an average of 500 records per day and the average time to file one record on the shelf is 3 minutes.

Many of the forms and documents resulting from a patient appointment are not filed in the paper-based health record at the point of care. As a result, the Patient Administration department receives loose medical record forms and test results back from the hospital's clinical and support departments. These forms or "loose chits" average 3000 pages per week day and result in considerable work load for the medical record department. The chits are collated by two personnel and then the responsible medical record technician files the forms in the medical record on the shelf. The average time to file a patient's chit is 3 minutes per record.

Figure 4. Hybrid (EMR/Paper) Record Process

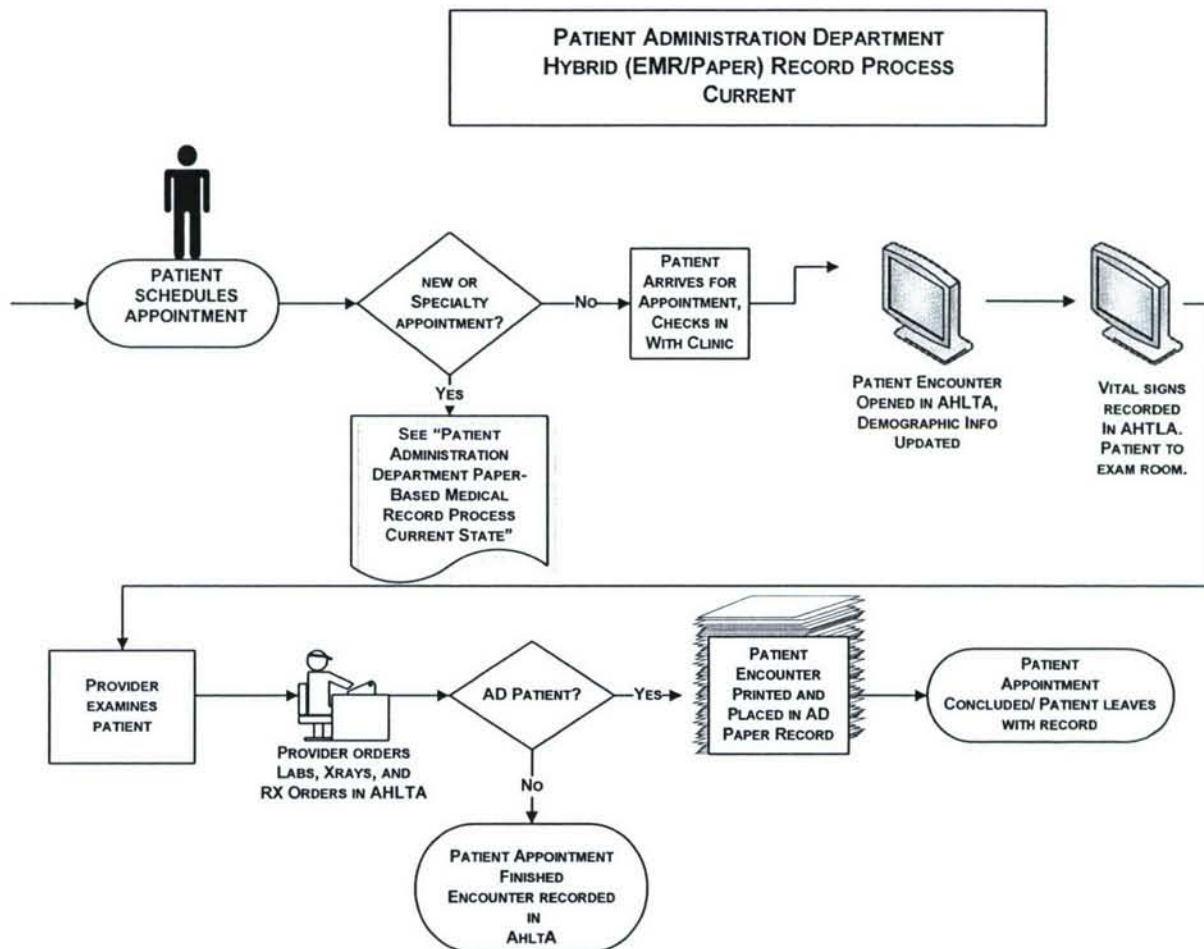
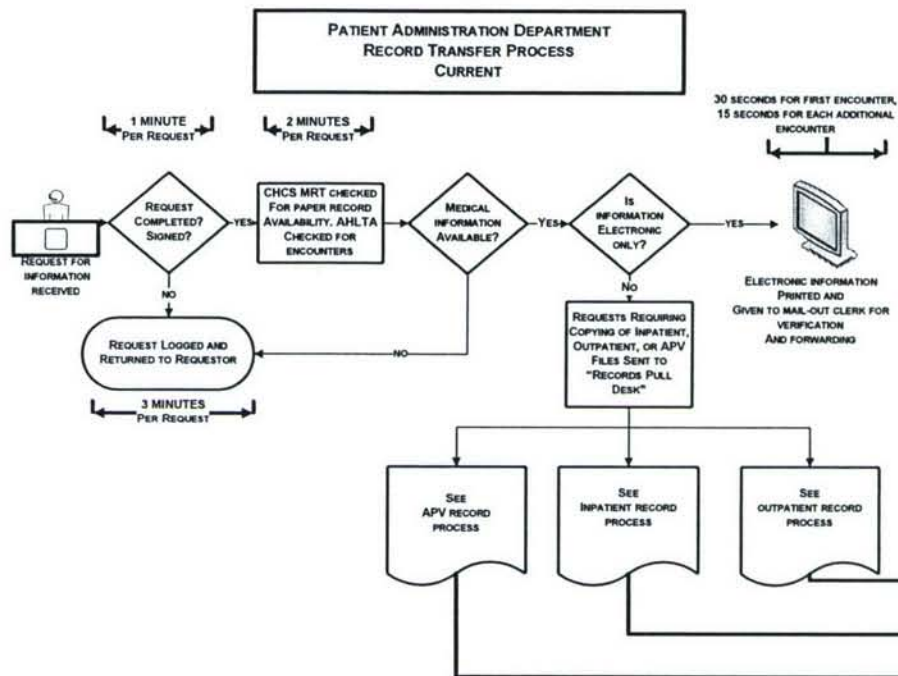


Figure 4 details the current processes in Patient Administration with AHLTA implemented at NMCS D. Currently, the department is operating in a hybrid medical record environment consisting of both paper and electronic medical records. When a patient appointment is scheduled the medical records department only pulls the record for “New” or “Specialty Appointments”. For routine and follow-up appointments the medical records department does not send the records to the clinic unless specifically requested by the physician. As fewer records are pulled and delivered the medical records section has been able to shift manpower to other areas within Patient Administration that have been understaffed (Records Retirement).

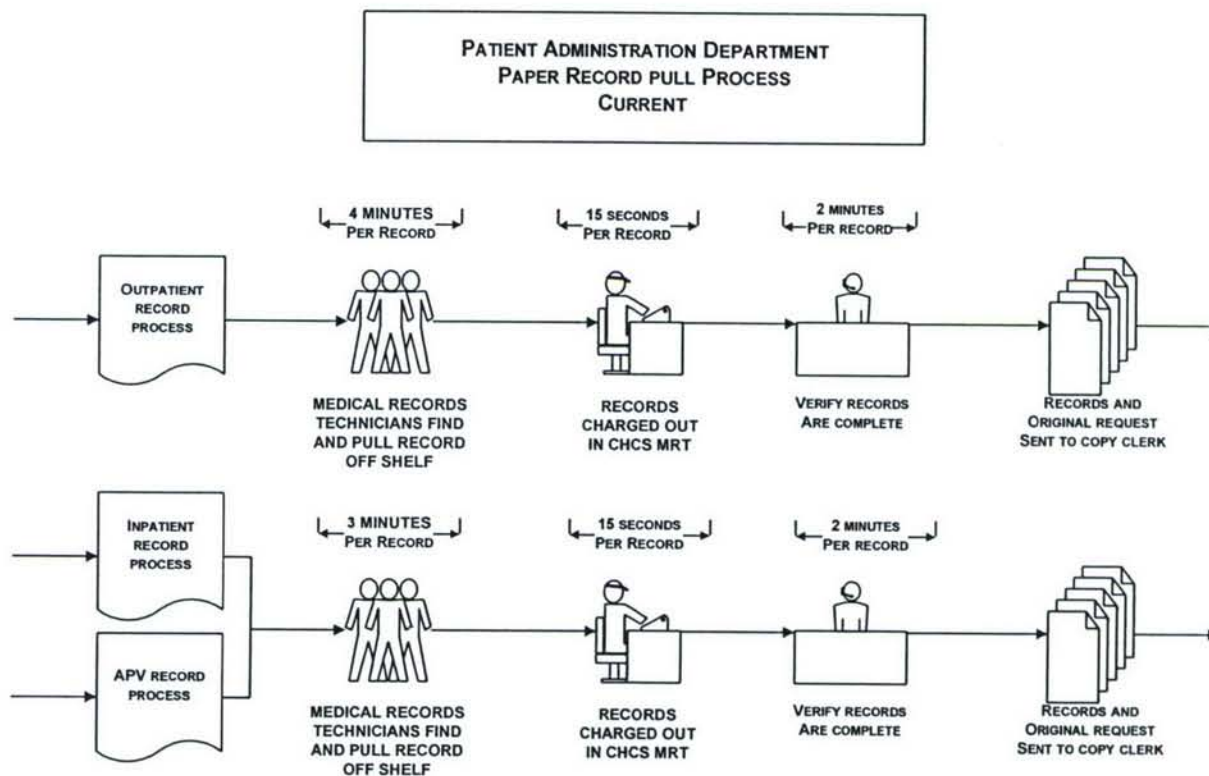
Figure 5. Record Transfer Process



Record transfers and personnel health information requests are a significant amount of workload for the PAD department. This section handles the transfer of medical records for military moves and copies for patients and network providers. The records transfer section is currently impacted by AHLTA implementation and in the future, its processes will be completely transformed. Historically, when patients or providers required copies of medical records, they filled out a request and the records, if available, were pulled from the shelf and copied. AHLTA has added a time consuming step. AHLTA requires records transfer personnel to access AHLTA to search for patient encounters in the electronic medical record. If there are encounters they [encounters] must be individually printed or saved as a PDF file onto a disk. This process is time consuming because AHLTA does not currently have batch print ability. Instead of highlighting all encounters that need to be printed, each encounter must be printed individually. According to

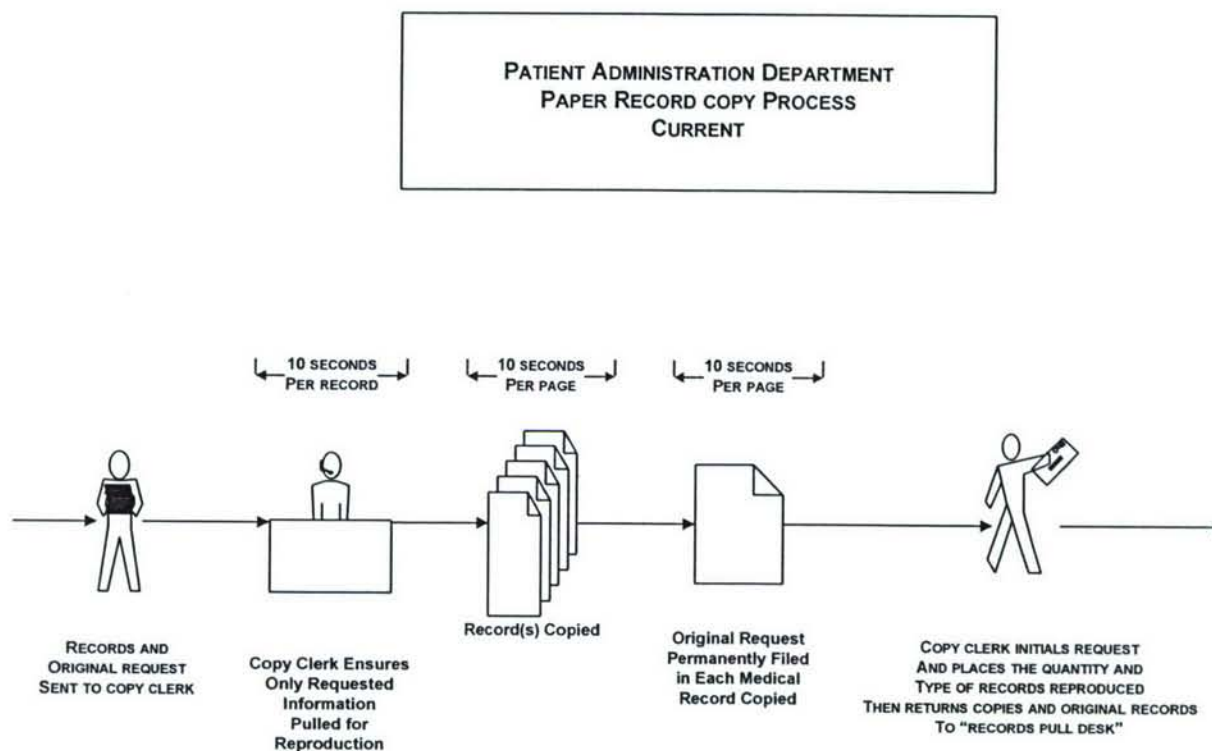
the process owner, it takes 30 seconds to print one encounter and 15 seconds for each additional encounter (Kelly, 2006). The following sections walk through the records transfer processes.

Figure 6. Paper Record Pull Process



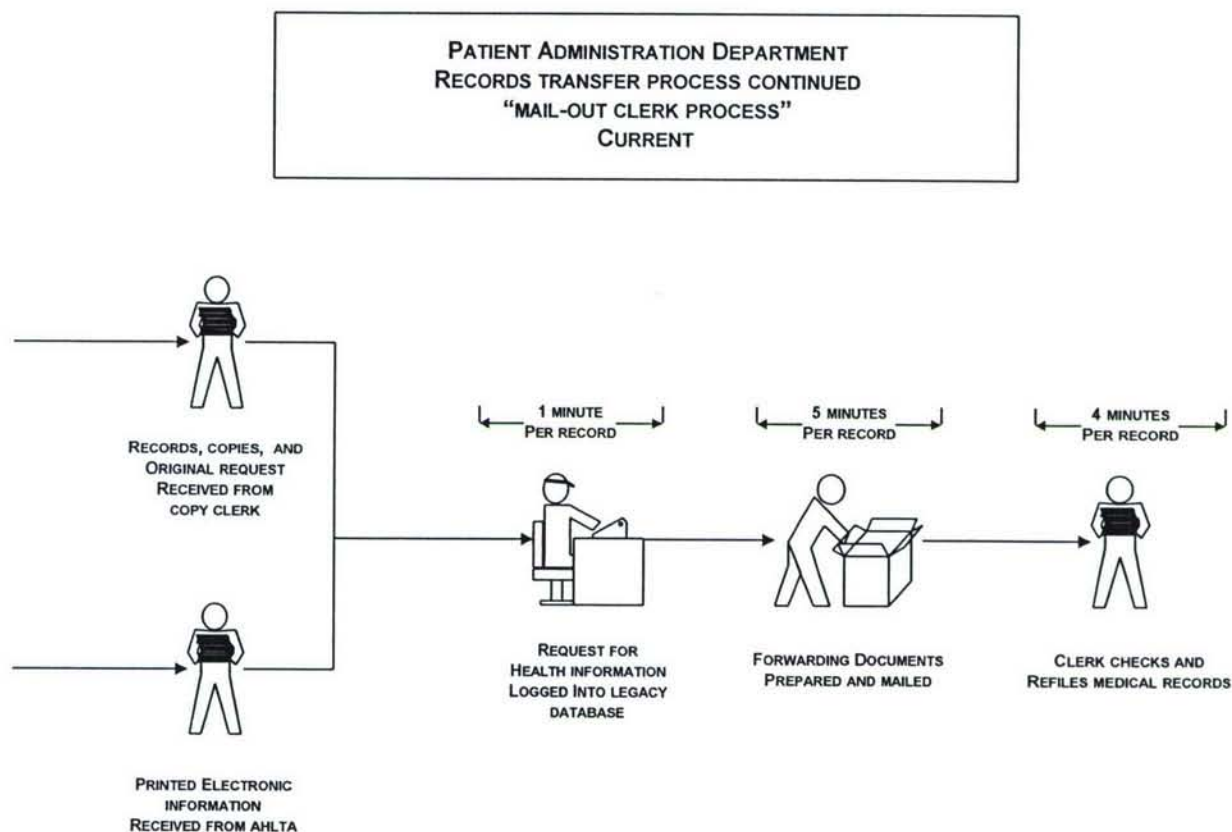
The Records transfer branch receives an average of 26 record transfer requests a day. Depending on the patient's medical history and the nature of the request, records from outpatient, inpatient, or APV sections may have to be pulled from their storage locations. According to the process owner, the average time to pull one record is four minutes. As depicted in the Figure 6 above, the records from the applicable areas are pulled and charged out via the MRT module of CHCS and sent to the copy desk. This process, like many of the paper-based health records processes is time consuming and labor intensive. Additionally, this process provides many opportunities for protected health information to be misplaced or lost.

Figure 7. Paper Record Copy Process



Once the records are pulled from the applicable sections within the medical record section they are sent to the copy clerk desk. As documented in the above process, the records are received by the copy clerk and screened for correctness and compliance with the record request. Once the information is verified, the records are copied and the originals are returned to the records pull desk. According to the process owner the average time to copy a record is 30 seconds per page.

Figure 8. Mail-Out Clerk Process



After the records are copied, the mail out clerk ensures that the request is logged into a legacy database and is then prepared for mailing. Once the request is mailed out the original request is filed in the medical record. This step, like the rest of the records transfer process will be significantly impacted by AHLTA.

Figure 9. Future Electronic Medical Record Transfer Process

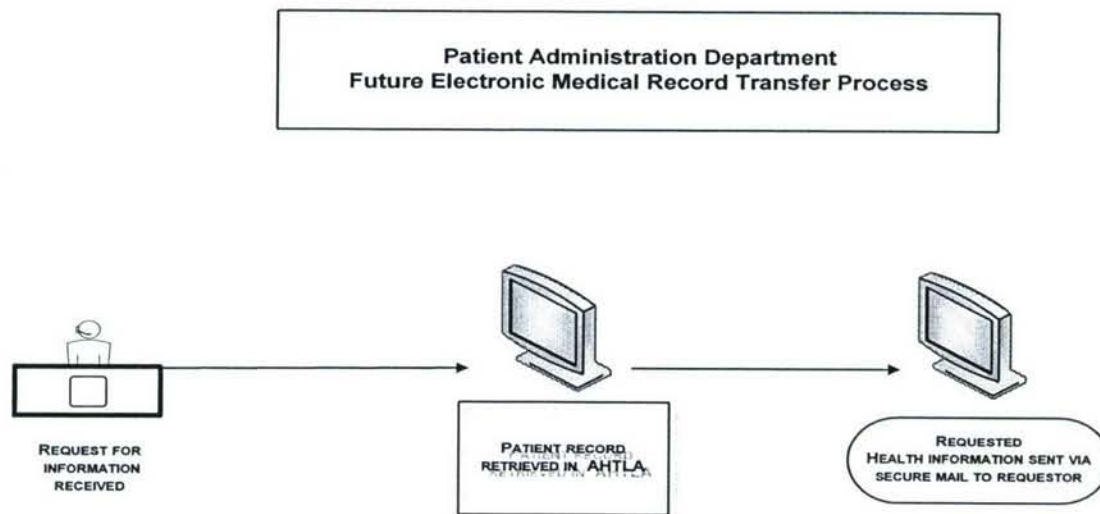


Figure 9 is a depiction of the medical records process of a fully electronic medical record. This depiction assumes that the entire patient record/history is available within AHLTA to include images, inpatient information, and ancillary modules.

According to the PAD department head, with the current workload and staff, it can take up to 35 days to copy patient's paper health record (Jenkins, 2006). This process is very time consuming and an inefficient use of finite human resources. Additionally the possibility of lost or misfiled health information is a concern. Eventually AHLTA will enable the transfer of health information via secure electronic media that will be quick and efficient. Currently, the Patient Administration department is attempting to copy AHLTA encounters onto compact discs. However, the AHLTA system does not lend itself to efficient exportation of encounters. AHLTA does not have the ability to batch save or print a patient's record. As a result, a records transfer

staff member must go through the patient's electronic medical record and individually select each encounter to be saved to disk. Despite this limitation the department estimates that it can save more than \$12K a year in cost avoidance in postage, and material (paper, toner, etc) maintenance. While this is a good start, the department is currently scanning only 1/8 of the records that could be scanned for lack of technology support (Jenkins, 2005).

Coding

Patient Administration has responsibility for ensuring that the hospital is accurately capturing the medical care provided. This requirement is achieved through the use of Evaluation and Management codes or Procedures and Diagnosis codes, which are based on the documentation in the Medical Record. Coder personnel screen the Chronological Record of Medical Care (SF600) and determine which codes are supported by the doctor's documentation. The coding function is essential to the hospital getting credit for care provided and enables proper reimbursement for the care. With the Prospective Payment System and the need for Military Treatment Facility commander's to do more with less, accurate coding is imperative.

AHLTA implementation has an impact on how patient encounters are coded. When patient care is correctly documented into AHLTA by a health care provider the system automatically codes the care given. A workgroup was tasked with examining the full impact that AHLTA will have on coding in the future. Some of the issues examined by the group included: coding processes, impact on human resources, and methods to ensure appropriate workload capture. Prior to AHLTA, the hospital employed 48 Outpatient Coders and coding was decentralized and compartmentalized throughout the hospital. (CHCS II Future State Coding, BPR Team 2005).

A coding supervisor is located in the Patient Administration Department and is responsible for maintaining the appropriate coding references and ensures coders receive access

to required continuing education opportunities. In the clinics that do not have coders assigned, responsibility for coding falls to the health care providers (BPR CHCS II Future State Coding). The coding supervisor ensures that coders receive continuing education as needed for reporting errors. Each coder spent up to two hours per week correcting administrative errors (BPR CHCS II Future State Coding). Under this system data quality is not as efficient as it needs to be in the current operating environment.

There has been no guidance from BUMED on coding and auditing processes in an AHLTA environment. AHLTA is an electronic medical record system that will enable the physicians to code their notes as they happen during the patient encounter. AHLTA has the ability for templates to be built and used to increase provider efficiency. AHLTA will eventually eliminate the need for most external coders but for data quality assurance, coding auditors will be essential. Coding auditors will have the ability to append providers' electronic medical file. The PAD transitioned 15 coders to nine coding auditors and attempted to hire an additional 6 coding auditors to fill the requirement. Coding auditors will be needed to ensure that highly specialized areas of care such as Cardiology and Otolaryngology are accurately capturing the care they provide (CHCS II Future State Coding, 2005).

In order to address the issue of coding in the AHLTA environment a team was assembled to make recommendations on the future coding processes. This team, "The CHCS II Future State Coding, Business Process Reengineering Team" made several recommendations for the leadership to consider. They recommended that outpatient coding functions be centralized and under the control of the Patient Administration Department. The importance of coder-auditors having the appropriate access within AHLTA to monitor physician documentation to ensure accurate coding was emphasized by the group. The group recommended that the fifteen

outpatient coders be transitioned to 9 coding auditor personnel and suggested that a physician liaison be identified for assisting Coders personnel to reduce coding and billing time.

Prior to AHLTA implementation Outpatient Coding at NMCSO was decentralized and lacked clear direction and consistent controls. AHLTA will significantly change how coding will be captured. AHLTA ensures that patient care is captured at the point-of-care by the provider. This change will be a positive one and it will have a profound effect on data quality. With AHLTA there is a need for coder-auditors that perform quality assurance checks on patient encounters. Until all of the hospital services are available in AHLTA there will continue to be a need for some coding specialists. Ultimately, coder focus will be directed at audit functions as AHLTA takes the burden of coding encounters.

Transcription

The Patient Administration Department utilizes a contractor to transcribe doctor's notes from voice recording to print form. The contractor is required to provide the transcribed medical reports to NMCSO via paper copies and/or electronic copies. However, there is no efficient way to import this data into AHLTA. The electronic files cannot be automatically uploaded so the transcribed notes are filed in the paper-based records. If the documentation is added to AHLTA then it is scanned into the clinical notes section of an encounter and is a dummy document (i.e., it is not searchable or usable for automated data reporting).

The cost of the transcription service is a considerable part of the PAD's budget and its oversight has become a management burden. The hospital pays the contractor by the number of lines transcribed and this number has been steadily rising. The Patient Administration Department is currently exploring Commercial off the Shelf (COTS) voice recognition systems that will write directly to AHLTA.

Scanning Paper Records into AHLTA

There was no guidance or standardized process for clinic leadership to follow when deciding how and what paper medical documents to include in EMR. Some clinical services took the initiative to scan documents into AHLTA while others continued to use paper-based methods. The EMR working group formulated plans for scanning necessary and appropriate medical forms such as discharge summaries from inpatient care into AHLTA. Importing a patient's entire paper-based medical record into AHLTA is not practical and unnecessary. The prioritization of medical records to be scanned is essential to ensuring that the EMR is a robust and value-adding tool for quality patient care. At the closing point of this study the group was still formulating a list of required documents and standard operation procedures for scanning documents into AHLTA. The AHLTA working group identified scanning discharge summaries into AHLTA as one of the first areas that could increase AHLTA's value to providers.

Obstetrics Triage Notes

Obstetrics Triage Notes was one area of medical documentation that the EMR work group identified as an opportunity to improve the utility of AHLTA. The EMR work group tasked a sub-group to work with stakeholders to develop plans to utilize AHLTA for capturing Labor and Delivery workload. When pregnant mothers present to the Labor and Delivery for conditions that do not result in an admission (false labor) their visit incurs an outpatient appointment. Prior to AHLTA, the L&D staff would create an appointment in CHCS and a coder from Patient Administration would code the visit.

The first attempt to use AHLTA for these Labor and Delivery patients required L&D personnel to create an encounter in AHLTA. After the encounter was reviewed by a physician they signed the encounter off and the visit would be coded by AHLTA. Reviewing these

encounters in AHLTA was a slow process and resulted in providers spending from 2-4 hours a day on signing off AHLTA encounters. As a result of this increased burden on the providers, the Labor and Delivery department head discontinued the initiative.

After this initial setback, the group created a new process that would not result in more workload for providers. The revised process required the L&D personnel to scan the encounter notes into the “Clinical Notes” section of AHLTA which makes the visit information available in AHLTA without creating an encounter requiring the provider to sign off. However, this process resulted in un-coded notes. At the close of this study the issue of Obstetrics Triage Notes is still being worked by a sub-group of the EMR work group.

Discharge Summaries

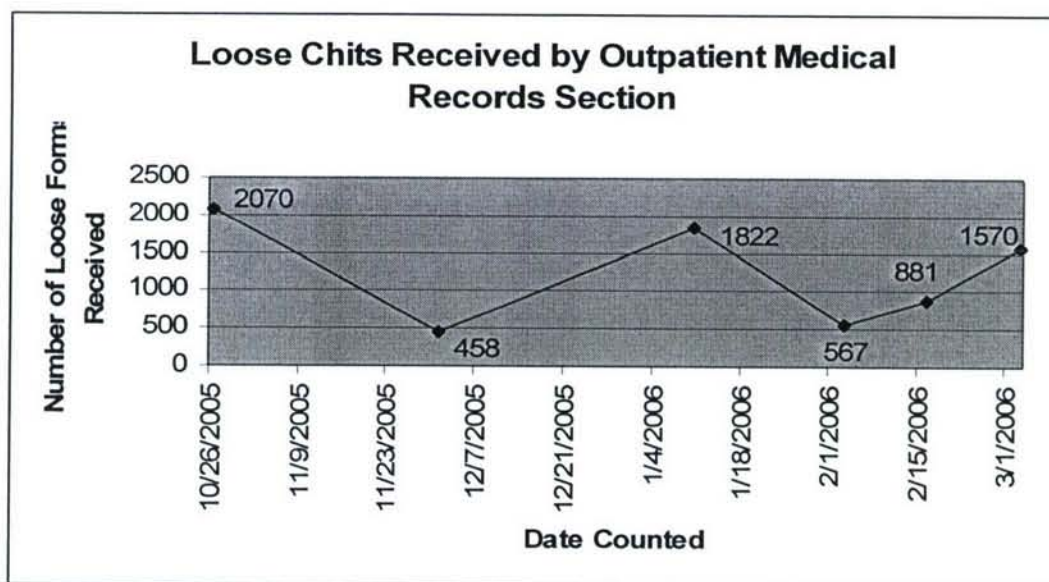
The AHLTA working group identified scanning discharge summaries into AHLTA as a significant issue to improve AHLTA’s value to providers. Historically there has been a problem with patients leaving the hospital after an inpatient stay and presenting to their outpatient follow-up appointments and the provider does not have the patient’s medical records. Scanning in a patient’s discharge summary allows providers to utilize AHLTA to review the patient’s medical history during the follow up visit. Patient care quality and safety is improved when the provider has access to the appropriate medical information. Having the complete patient history at their fingertips will allow providers to provide more efficient and appropriate medical care to their patients.

Loose Chart Filing

The sustainment team has found a decrease in clinic use of “Shadow Files” and clinics are no longer printing SF600s except for active duty patients whose records are maintained outside of the hospital (AHLTA Sustainment Team Update, (2006)). The EMR is designed to

replace paper-based medical records once the entire Military Health System is utilizing AHLTA. However, over the time period of this study the number of loose chits was not significantly impacted according to the data received from the Outpatient Records Branch. Figure 11 is a graph showing the numbers of loose chits counted. The data were compiled by the outpatient medical records supervisor and presented to the EMR working group. However, during interviews with the process owners they reported that there was a noticeable decrease in the amount of loose medical chits received. The researcher attributed this disparity to the random data collection method employed by the Outpatient Records Branch.

Figure 10. Loose Chits Received by Outpatient Medical Records Section

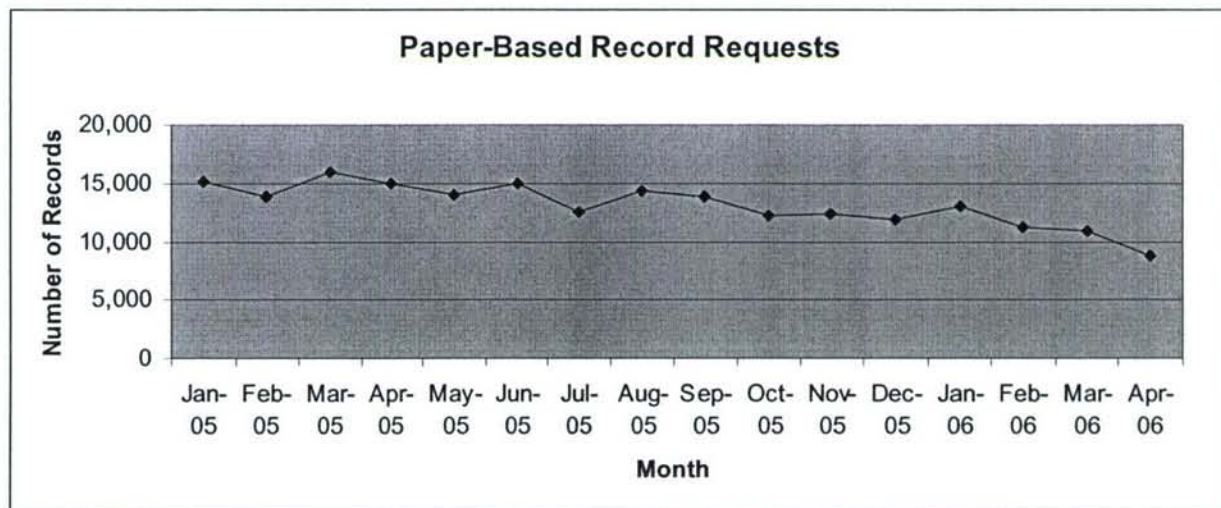


Medical Record Deliveries

Figure 12 displays the number of record requests each month for patient appointments at NMCS D. The data was obtained from the Patient Administration Department's monthly statistics report that captures departmental workload. These data indicate a decline in the number of records requested and delivered to the hospital clinics. Once AHLTA was fully implemented within the hospital, the outpatient medical records department reduced delivery to certain clinics

and appointment types. Unless the appointment was a new patient, or specialty appointment the paper-based medical record is not required. However, the decision to stop delivering the paper record was based on the individual clinic's readiness to go paperless. The decision to stop delivery was coordinated with the clinic and depended on provider comfort with AHLTA and assurance that the clinic had a solid plan to ensure complete patient information.

Figure 11. Paper-Based Record Requests



Examine required resource changes to include: manpower, equipment, and facility impacts.

Personnel

The Patient Administration Department accomplishes its outpatient medical records tasks utilizing 20 civil service and 10 contract personnel. In fiscal year 2005 Patient Administration Department expenditures for personnel contracts were \$1,761,125, and \$6,209,421 for civil service. As AHLTA continues to become the dominant source for patient medical records the department's personnel requirements will change.

Since AHLTA's implementation many of the hospital's clinics have stopped the delivery of paper-based medical records for routine or follow up patients. In January 2006, the AHLTA

Sustainment Team reported that there were more than 939 records no longer being sent to the clinics (AHLTA Sustainment Team Update, 2006). Clinic requests for paper medical records will continue to decrease and subsequently, the outpatient medical record branch's workload has decreased. As the workload decreased, the Outpatient Records Branch was able to move two of their contract personnel to the records transfer section. The Patient Administration department plans to continue shifting contract personnel to areas that are experiencing backlogs in workload. By next fiscal year (FY07) there will be up to a 50% cut in the number of contract personnel in health record management (Jenkins, 2006 re the NMCSD MANCON). This cut in contract personnel is the result of external financial constraints and not a direct result of AHLTA. However, a decrease in paper-based medical record workload will ease the impact of this reduction in personnel.

As AHLTA implementation progressed it was important to keep the Medical Records staff informed of the progress and focus of the AHLTA implementation program. Understandably, some of the long tenured medical record personnel were concerned about their future as AHLTA began to eliminate much of their workload. The Patient Administration leadership has kept the staff up to date on AHLTA's progress and ensured that the staff has been well-informed.

Changing Requirements; New Position Description for EMR Manager/ Technician

In addition to the number of personnel required, the knowledge, skills, and abilities of medical record personnel will change as the medical record evolves from paper to electrons. The EMR working group recognized that AHLTA would require different skills to properly manage the electronic medical record. As a result the group drafted a new position description for a

Supervisory Medical Records Administration Specialist and revised the existing position description for Medical Record Technician.

The Supervisory Medical Records Administration Specialist will plan and direct the daily operational activities of the Outpatient Records Branch of the Patient Administration Department including the Electronic Medical Records (EMR) Office. This position will manage the day-to-day operations of the Electronic Medical Records (EMR) Office at the administrator level and be responsible for the Armed Forces Longitudinal Health Record Treatment Application (AHLTA). The complete Position Description can be found in appendix (b).

The position description for Medical Record Technicians had to be revised to reflect the changes in the medical record administration. The revised position description reflects the applicable language to ensure that the incumbent has the necessary knowledge, skills, and abilities to operate in an EMR environment. The complete Position Description can be found in appendix (c).

Equipment

In order for the medical records personnel in Patient Administration to effectively leverage AHLTA they will have to purchase additional information technology. The EMR working group identified the immediate need for high speed scanners, printers, and a HIPPA compliant shredder. The patient medical record is now a hybrid record consisting of both paper and electronic information. As a result, the department requires new computer stations and data drops to facilitate access to the electronic medical record. As indicated in the changes to work processes section of this paper, the Records Transfer Section is significantly impacted by AHLTA. This section needs to scan documents from outside providers and military health

facilities without AHLTA into AHTLA. Additionally, there are forms from inpatient visits, consent forms and other documents that providers must access. Currently there is a multidisciplinary group determining which medical forms and documents need to be scanned into the patient's electronic medical record. Documents that will be scanned include forms from both inpatient and outpatient areas of care. Once there is a clear understanding of exactly which documents need to be scanned into AHLTA, Patient Administration and clinic personnel will begin adding these documents to AHLTA. The scanners that the Patient Administration department utilizes cannot effectively serve the increased need for scanning. The department also needs high speed printers as record copy requests transition from copying to printing. High-speed shredders are required to dispose of personal health information once it has been scanned into AHLTA. The cost of adding four high speed scanners and a HIPPA compliant shredder is \$11,904 according to an issue paper drafted by the Patient Administration Department)

Impact on Space Requirements

The Patient Administration Department is responsible for many vital hospital functions. The current square footage imprint of department reflects these functions (Figure 12). However, out of the 21,000 square feet the department occupies, approximately 8910 square feet of this space is used for storage of more than 500,000 outpatient, inpatient, and ambulatory procedure visit documentation (Figure 13). As AHLTA replaces the requirement for maintenance and storage of paper-based records the hospital can recapture a large part of this space. Available space within the hospital is always at a premium and when this vital space is used for purposes other than direct patient care it is non-revenue generating overhead. Once AHLTA reduces the space requirement of the medical records department the area can be recaptured as a patient care area or some other type of revenue center.

Figure 12. Patient Administration Department

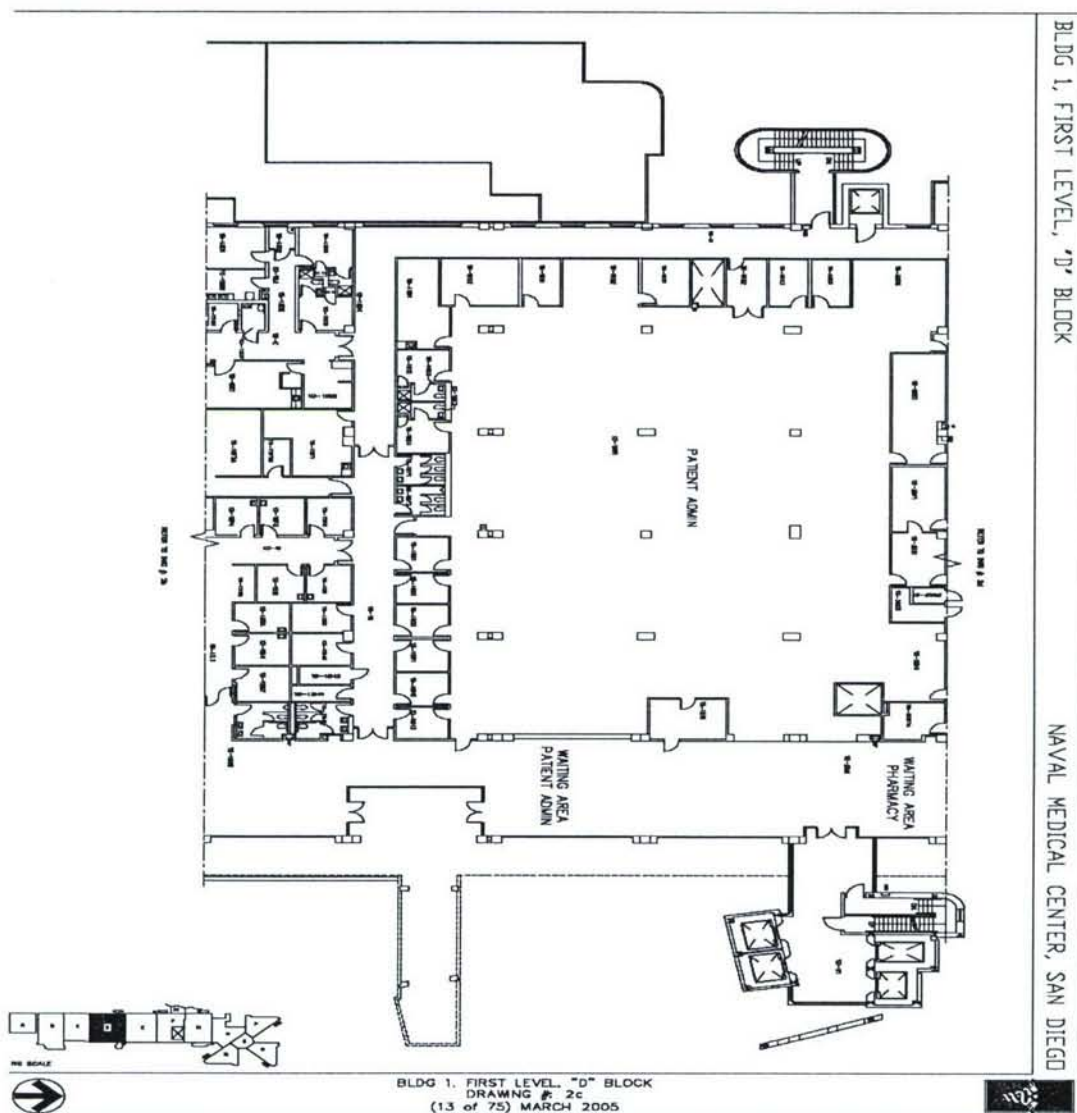
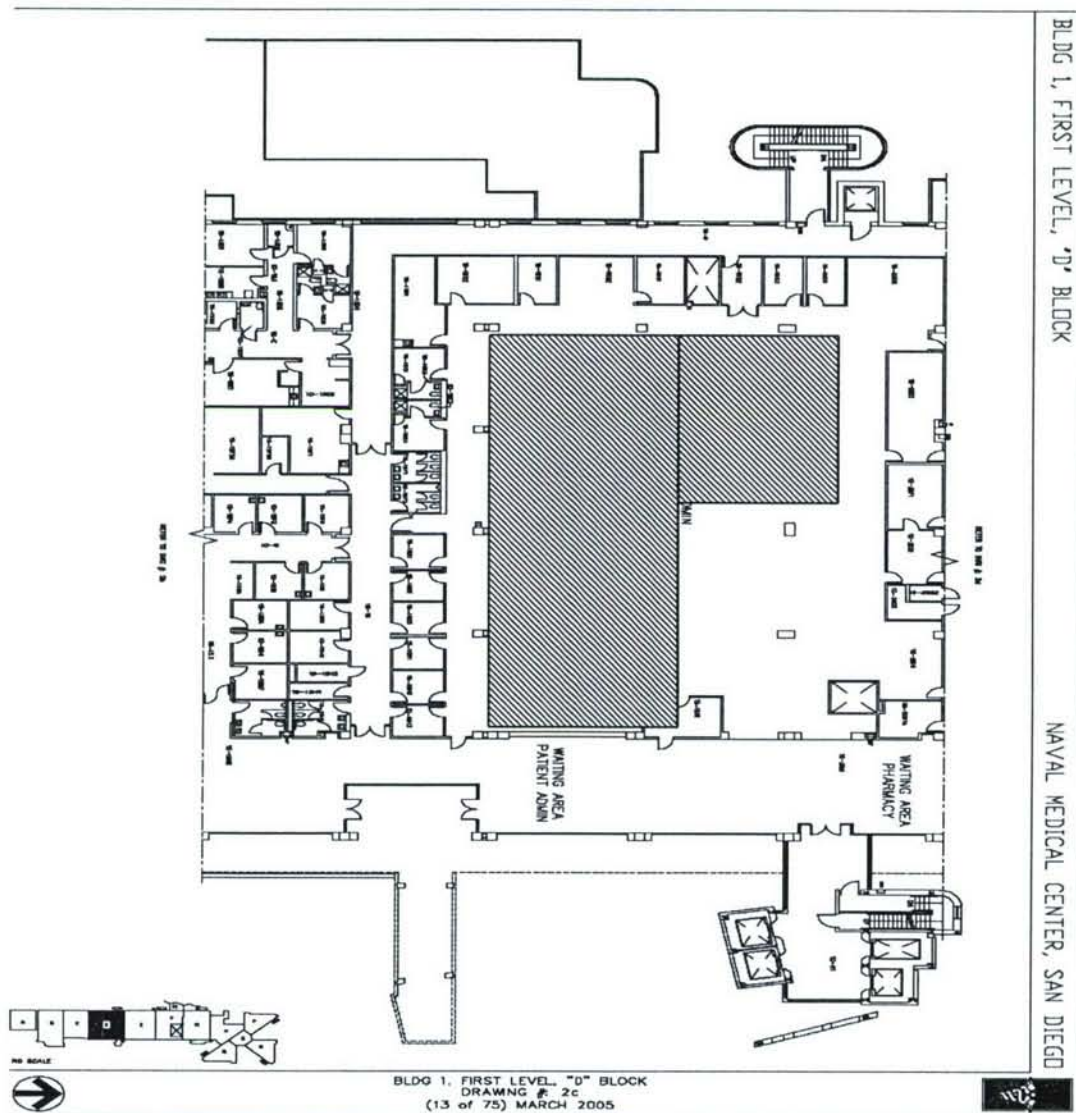


Figure 13. Patient Administration Department Area Used For Paper-Record Storage



Identify policies that need to be changed both internally and external to NMCS D

AHLTA will take more than two years to be completely deployed to Military Health System facilities in CONUS and OCONUS. Timeline for deployment to operational units is unknown at this time. Until the system is fully deployed and all modalities (EKG, ECHO, etc.) are on-line there will be a requirement to utilize paper-based medical records. If every encounter is printed, there will be a significant increase in paper printed, copied, filed, and managed since

the printed version of the SF600 averages three or more pages per encounter. Additionally, many beneficiaries will need copies of their medical records when transferring to duty stations not on AHLTA or health systems outside of the Military Health System. The fact that AHLTA does not have a batch print/save feature to print or copy makes these administrative tasks very time consuming.

Active Duty Health Records

Until the entire MHS is utilizing AHLTA to include forward deployed medical units there is a requirement for Active Duty patients to carry a complete outpatient medical record. This requirement results in the duplication of medical information and adds to the amount of paper records created. The printed version of the electronic medical record is three pages for every one page of the traditional paper SF600. Printing the EMR pages is counter productive to the goal of reducing paper. 44% of the more than 5 million NMCS D appointments were for active duty patients in the last four fiscal years (Fitzpatrick, 2006). Active duty personnel are constantly transferring and require their records to be updated by printing AHLTA encounters which adds additional man-hours and workload for PAD.

Health Record Retirement

Records that are inactive for a period of three years are retired to the National Personnel Records Center (NPRC) in St. Louis Missouri. Since NMCS D is a teaching facility, records must be kept for a period of five years versus the normal three-year requirement before they are retired. Record retirement is a significant part of the Outpatient Records Branch workload. NMCS D has approximately 500,000 medical records and retires 100,000 records per year. The implementation of a fully electronic medical record will eliminate the need for archiving, storage, and retirement of paper-based health records. However, until AHLTA is a complete

medical record available throughout the Military Health System the system must deal with hybrid medical records.

The Bureau of Medicine and Surgery was contacted for guidance on how records will be retired in the future. At this time, BUMED has not issued guidance on how to retire hybrid records and is waiting for NPRC guidance (Jenkins, 2005). NPRC is the Department of Defense's authority on personnel records handling procedures. To date, the NPRC has not issued guidance on how the implementation of the EMR will factor into medical record retirement. The current NPRC policy requires that paper medical record be complete prior to transfer to NPRC for retirement. A complete record contains all medical encounters and tests, many of which are now located in AHLTA. Because a record is not retired unless it has been inactive for at least three years, retirement procedures for hybrid records are not a pressing issue. However, in three years there will be hybrid records that are eligible for retirement. The time to address this issue and formulate policy is now. Managing a hybrid medical record without changing current policies will result in a significant increase in workload for the patient administration department.

Manual of the Medical Department

The Manual of the Medical Department is one of the documents that were identified by the EMR team as reference policy that requires changes to reflect AHLTA. The Manual of the Medical Department (NAVMEDINST P-117) is an authoritative document that describes the various components and procedures of Navy Medicine. The document is maintained by the Bureau of Medicine and Surgery (BUMED) and consists of 23 chapters. Chapter 16 of this manual, "Medical Records", prescribes Navy Policy for medical record handling and administration. This document was last updated December 23, 1994 and since that time has had

111 changes. With the implementation of an EMR, significant revision of this document is required. The EMR work group examined the medical records chapter and identified areas that need to be updated to reflect AHLTA. The input was prepared by the group and will be submitted to BUMED through appropriate channels. The majority of the changes recommended involved the insertion of language reflecting the electronic medical record. Appendix (d) contains detailed information on the submitted changes.

Lessons Learned

There were several important lessons learned from this project that should be considered by individuals and organizations undertaking EMR implementation. Several characteristics of the AHLTA deployment were essential for NMCS D's EMR implementation including: support from hospital leadership, physician acceptance, cultural acceptance of information technology, communication, and incremental and manageable deployment plans.

Hospital Leadership Support is Essential

AHLTA is supported by the senior leaders in Navy and DoD medicine including the Assistant Secretary of Defense for Health Affairs and the Joint Chiefs of Staff. These leaders are committed to implementing AHLTA and ensuring it meets the goal of improved health care quality for all eligible beneficiaries. This same commitment is evident in the leadership of NMCS D. Throughout the period of this study, the hospital leadership has been involved and dedicated to the AHLTA program. This dedication was demonstrated in their provision of the necessary resources when needed. The AHLTA Sustainment Team continues to communicate with NMCS D's Executive Steering Committee in order to keep the leadership aware and involved with all facets of the program's implementation.

Physician Acceptance

AHLTA's success is dependent upon the physicians that must use the system. NMCS D correctly ensured that there was a physician champion involved with implementation and sustainment. Transitioning to AHLTA has been difficult for many physicians. Their productivity is severely degraded while learning to use AHLTA. In the beginning of their learning process, providers spent more time populating the fields within AHLTA than they did examining patients. Additionally, AHLTA has effectively made physicians data entry personnel since the providers are entering their own information into a computer system. There were many physicians that were frustrated with the amount of time required to document a patient encounter into AHLTA. It is essential that the hospital leadership recognize this frustration and reinforce the importance of AHLTA's success to military health. Most providers understand the importance of the electronic medical record and the need to endure the initial slowdown in order to make AHLTA program work.

Cultural Acceptance of Information Technology

The importance of information technology and the desire to utilize it for improved health care outcomes is part of the NMCS D command culture. AHLTA implementation at NMCS D was started when directed and deployed throughout the hospital in the required time. Other military treatment facilities started, and then stopped when their productivity suffered.

At NMCS D there is a commitment to leveraging information technology to improve patient care. Prior to AHLTA implementation, NMCS D was using a system called Easy CHCS. Easy CHCS is Graphical User Interface (GUI) application that enabled providers to utilize CHCS through a familiar window based program. CHCS is a virtual memory system relational database which is not windows based and is not as easy to navigate as windows based programs.

Physician use and comfort with this GUI-based Easy CHCS application probably had a significant impact on physician acceptance of AHLTA. The organizational commitment to information technology and the hospitals experience with previous technology applications had a direct positive impact on AHLTA's deployment at NMCSO.

Communication

As previously discussed in the leadership commitment section, NMCSO leadership was very supportive of the AHLTA implementation. The implementation and sustainment teams had regular meetings and their progress was communicated to the hospital leadership. When deploying a program of this size, it is essential that there is effective communication amongst all stakeholders. Additionally, it was essential that the physicians and clinical personnel were given the information they needed and that they were allowed to voice their concerns to the hospital leadership. The use of physician and clinical representatives on the implementation and sustainment teams were essential to ensuring that the decision makers had insight into the stakeholders experience with AHLTA.

Incremental and Manageable Deployment Plans

NMCSO's deployment of AHLTA was well planned and divided into manageable sections which had a positive impact on the success of the implementation. The deployment started with small training blocks and then transitioned to deployment one clinic at a time. When the clinics were transitioning to AHLTA, their workload was appropriately scaled back and the users were provided with ample support from the training and deployment staff. The clinic's workload was cut by up to 50% during the initial training and then gradually increased to pre-AHLTA levels as users became more comfortable with the system. This incremental deployment allowed the implementation team to observe what worked well and to identify areas that needed

to be improved. Concurrent review of the implementation strategy and the ability to apply lessons learned increased the efficiency of the deployment.

Although there were numerous positive lessons learned from this study, some issues emerged detracted from the overall success of the AHLTA implementation at NMCS D. These issues include the use of a hybrid medical record, and a lack of standardized guidance from higher authority, lack of downtime procedures, and problems with the system's speed.

Administrative personnel suggested that the system was not designed to allow them to do their jobs efficiently (i.e. no batch print or batch save for Records Transfer procedures). However, the issue of records transfers is one that will resolve once the entire MHS is on AHLTA.

Hybrid Records

AHLTA is designed to be an electronic medical record. The use of hybrid records and continued dependence on paper-based medical records limits AHLTA's success. Managing both paper and electronic medical records is inefficient and prolongs the transition to the EMR. Additionally, the use of both paper-based documentation and electronic information increases the opportunity for important medical information to be overlooked. Maintaining medical information in two different formats is inefficient and in many cases, redundant.

EMR systems must be capable of supporting a paperless record immediately upon deployment. AHLTA provides a solid platform for documentation of a patient encounter, but the initial deployment of the system at NMCS D appears to have overlooked the administrative needs that accompany patient care. Records transfers, patient consents, and outside provider information are areas that need to be addressed up front in order to go paperless. However, once all of the AHLTA modules have been deployed, and the entire Military Health System is utilizing AHLTA, a truly paperless medical record will be possible. Until that time, NMCS D

should decrease paper records in every way that it can.

Need for Standardized Guidance

Though the leadership throughout BUMED wholly supports AHLTA they have produced limited guidance/policy on how to successfully implement the system. This has had several negative implications at NMCS D. Transitioning to an electronic medical record is a major undertaking and one that requires thorough planning. There were too many questions left unanswered during the transition. The majority of the questions examined by the Electronic Medical Records Working group were examples of areas that should have been addressed by higher authority. These unanswered questions will be dealt with by individual hospitals and result in the continuation of a disjointed system from one MTF to the next. To prevent this, it is vital that the proper authority publish standardized guidance on how the future medical record is maintained. The military health record can no longer be service specific and should be standardized throughout the three Services. A facility the size of NMCS D and the fact that it is a major training pipeline for our military health care providers should allow it to influence BUMED policy and could push for a more aggressive plan to go paperless.

Downtime Procedures

During the course of this study there were several occasions when AHLTA was unavailable as a result various network issues. When AHLTA is down for minutes or even an hour it is not a significant problem. However, the longer the system is down, the more problematic it becomes. If AHLTA is down, providers must utilize traditional paper methods until the system is operational again. When the system does come up it is essential that the work be documented into the patients record and the visit coded for proper workload credit. On one occasion, the system was down for a day and a half during the week. The hospital did not have

pre-established procedures for providers to turn to in this event. Several hours into the downtime, the sustainment team finally disseminated instructions to the providers on how to document patient care and ensure that the workload would be captured during the down time. This guidance came after many clinics had come up with different plans on their own. This led to additional work and frustration from the hospital staff. Procedures for occasions when the system unexpectedly crashes should be drafted and disseminated in advance.

Throughout AHLTA implementation, physician productivity was negatively impacted during patient appointments. The provider's lack of experience with the system was a small part of the inefficiency during patient appointments. A major reason for the slow patient appointments was the speed of the system as it communicated with the Clinical Data Repository (CDR). The CDR is located at a Defense Information Systems Agency mega center in the United States. The exact location is not advertised for security reasons. All MHS AHLTA encounters are maintained within this system. As with any network, the more users on the network and the higher the amount of data being transmitted on the network, the slower it becomes. AHLTA frequently saves the encounter information on the CDR during a patient appointment. When the system slows down, patient appointments are delayed and at times the encounter information is lost during the transmission with the CDR. This problem with the slow refresh speeds is being addressed and will be corrected with an upgrade and addition of local caches to store patient encounter information.

Limitations

This study attempts to document the transformation of the medical record from paper to electrons. While this research provides a starting point, the time period of the study was not sufficient to observe the complete transformation of the medical record. The implementation

process is still underway therefore the researcher is not privy to the full implications of AHLTA at NMCS D at the closure of this study. Baseline data were extremely difficult to obtain from many areas in the Patient Administration Department. The archaic, paper-based methods utilized to handle health information in the Outpatient Records Branch prior to AHLTA did not provide for efficient and meaningful data. As a result it was not possible to clearly substantiate significant changes to workload in some functions of the department. Interviews with process owners in the outpatient record branch indicated that the amount of loose medical charts received had gone down. The random counts conducted by PAD personnel did not demonstrate a significant decline in loose charts. However, the manner in which these counts were conducted was not standardized and appeared to be rather inconsistent in method.

Certain stakeholders involved with AHLTA implementation were often unwilling to discuss their progress and it was difficult to obtain data from them. This difficulty resulted in limited discussion on the implementation and business process reengineering activities associated with AHLTA implementation. Unfortunately, this difficulty delayed the progress of this study. Although the reasons for the resistance are unknown to the researcher, the fear of being evaluated or having negative information reported could have been a factor. However, the focus of this study was the PAD department, and all members of the department were extremely cooperative and helpful. Ensuring that stakeholders understand the goals of the research and creating an environment of trust, free from fear of retribution is essential to obtaining quality data.

Utility of Results

The desired outcome of this study was to accurately document the transformation of the medical health record from paper to electrons and to provide lessons learned for other military

and civilian health facilities as they transition to an EMR system. Implementing an electronic medical record is a significant undertaking and one that affects every aspect of medical record administration. Utilizing the lessons learned from early adopters can be useful to other health care professionals and organizations planning on implementing similar EMR systems.

Recommendations for Further Study

In order to determine the actual impact of AHLTA implementation on access, cost, and quality, retrospective studies of key metrics such as coding, lost records, and Relative Value Units, would be beneficial. Additionally research into Provider and Patient satisfaction with AHLTA would give administrators some insight into how the system can be improved to gain stakeholder buy-in and increase opportunities for success. The stakeholders the researcher interviewed were not aware of the true cost of the AHLTA deployment within the hospital. A study into the direct and indirect costs of AHLTA implementation would provide useful data to decision makers when evaluating the success of the program.

Military Health System should look to the VA hospital system as an example of how to deal with the transition from paper to electronic records. The VA health system has a fully operable electronic health record. The VA's electronic health record (EHR) includes all diagnostic images and ancillary documentation that AHLTA currently lacks. Their EHR is capable of simplified data retrieval and is a valuable tool for health care quality and decision making. The VA hospital attributes their EHR implementation success to having buy-in from all stakeholders, provider champions, a firm launch date, and no hybrid records. They simply set a deadline for going paperless and stuck to it (Rossi, 2006). As AHLTA evolves from a tool to document outpatient encounters to a complete electronic health record the VA Health offers valuable lessons learned from their transition to electrons.

Was NMCS D successful? What is the benchmark that should be used to make this determination? NMCS D was tasked with implementing AHLTA at the hospital's outpatient clinics and it did so in the required time. In the sense of complying with the task of AHLTA deployment, NMCS D should be considered successful. Other military hospitals started implementing AHLTA and then discontinued it when their productivity dropped.

Access to care, quality of care, and the cost of care are ideal constructs in which AHLTA implementation success should be measured. Access was limited during the initial training and implementation period. While providers were learning how to use AHLTA, productivity measures were degraded. While this study did not measure improvements in quality, it is prudent to believe the system increased quality. For follow-up and routine appointments AHLTA has eliminated the issue of missing health records and prevents physicians having to see their patients without the necessary medical history.

Quality can be quantified in the number of lost or missing records, duplicated lab tests, and relative value units. Cost was not measured in this study. However, the cost of AHLTA deployment was considerable and should be examined in future studies. Costs in the form of new computers, training downtime, patient care sent to the network are valuable data for decision makers to have when evaluating AHLTA's success.

Conclusion

Implementation of an electronic medical record has resulted in significant changes to the way health information is managed at NMCS D. Enterprise-wide implementation of an automated, electronic health record system will change the manpower, facility, and resource requirements of military treatment facilities. This study captured just the initial stage of the transformation of the medical record. Simply implementing AHLTA at a facility is just the

beginning of the process of transforming medical records, not the end. Commanders must ensure that their organizations are well positioned to transition to a paperless health record. Once AHLTA is implemented, health care leaders must examine how they are doing business and continually challenge the status quo to improve patient health care. It is essential that that AHLTA users share their successes and failures with others so that all can benefit from these lessons. As an early adopter of the electronic medical record, NMCS D is well situated to provide useful lessons to other organizations that are faced with implementing electronic medical record systems and transforming the patient health record. Other Military Health System facilities can use the lessons learned by other as a starting point for their process.

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Appendix A

Block	Dates		Clinic	Providers	Nurses	Support	Admin	Imm
Block 0	10-Jan-05	NMC	Superuser	4				
	10-Jan-05	NMC	ITMD Superuser R			10		
	11-Jan-05	NMC	ITMD Superuser R			10		
	12/13-Jan-04	NMC	Superuser	8				
	12/13-Jan-04	NMC	Superuser R				10	
Block 1	19-Jan-05	NMC	ENT	25	3	26	8	
		NMC	Vestibular	2	0	0	1	
		NMC	Audiology	8	0	2	0	
Block 2	2-Feb-05	NMC	Ophthalmology	26	0	0	4	
		NMC	Cardiology	16	3	21	6	
Block 3	2-Mar-05	NMC	Neurology/Neuro Surgery	11	1	7	7	
		NMC	GI	10	4	9	6	
		NMC	Nuclear Medicine	6	0	12	0	
		NMC	DVBIC	4	0	0	1	
		NMC	Nephrology/Dialysis	12	2	5	1	
		NMC	DMS	2	0	0	4	
Block 4	16-Mar-05	NMC	Infectious Disease	12	3	4	5	
		NMC	Internal Med	35	7	12	11	
Block 5	30-Mar-05	NMC	Optometry	6	0	7	2	
		NMC	Population Health	6	0	1	0	
		NMC	Anesthesiology	27	1	8	0	
		NMC	Endocrinology/Rh	9	1	3	2	
		NMC	Radiation Therapy	3	1	13	2	
		NMC	Urology	13	1	21	7	
		NMC	Pulmonary	14	1	13	2	
Block 6	13-Apr-05	NMC	Pediatrics	70	42	87	5	
Block 7	27-Apr-05	NMC	Pediatrics	28	0	0	0	

		NMC	Orthopedics	38	3	29	1	
lock 8	11-May-05	NMC	Sleep Lab	0	0	3	0	
		NMC	Dermatology	23	0	23	0	
		NMC	Hematology/Oncology	9	3	7	3	
		NMC	Clinical Investigation	4	4	0	18	
		NMC	MRI	6	6	2	0	
		NMC	Occ Health	1	1	1	1	
		NMC	Nutrition	12	0	5	1	
lock 9	25-May-05	NMC	General Surgery	35	7	26	0	
		NMC	Vascular Surgery	5	1	3	0	
		NMC	Pediatric Surgery	2	0	0	3	
		NMC	PT/OT/Card Rehab	11	1	17	7	
		NMC	Ambulatory Infusion Clinic	0	4	5	0	
		NMC	Health Promotion	2	2	10	3	
		NMC	Medical Boards	0	0	0	10	
		NMC	Same Day Surgery	0	14	1	2	
		NMC	Pain Mgt	4	1	2	3	
		NMC	Preventive Med	1	0	1	6	
		NMC	Interventional Rad	3	2	11	3	
		NMC	Transfusion Therapy	2	0	0	0	
lock 10	8-Jun-05	NMC	GYN Oncology/Dysplasia	5	0	4	2	
		NMC	Mental Health	5	0	5	2	
		NMC	Mental Health (Child and Adolescent	10	0	4	1	
		NMC	Mental Health Services	28	1	6	2	
		NMC	DHOP	4	12	8	7	
		NMC	Social Work	2	0	0	2	
		NMC	Fleet Liaison	2		8		
		NMC	Oral Surgery	13	2	8	4	
		NMC	OMFS					
lock 11	22-Jun-05	NMC	Fetal Assessment	5	1	10	3	
		NMC	Medical Records	0	0	0	32	
		NMC	Medical Records Transcription	0	0	0	3	
		NMC	Pharm Coumadin	10	0	0	1	
		NMC	PCC	21	3	21	6	1
		NMC	Plastics	5	1	5	1	
		NMC	CT Surgery					
lock 12	7-Jul-05	NMC	OB/GYN	76	7	59	16	
		NMC	OB Triage Prep Room	0	53	22	6	75
lock 13	20-Jul-05	NMC	Drug and Alcohol Advisor	0	0	2	0	
		NMC	Substance Abuse	1	0	0	0	
		NMC	Breast Health	2	2	10	2	
		NTC	PCC	20	13	20	0	
		NTC	Physical Therapy	1	0	4	1	
		NTC	Orthopedics/Podiatry	15	2	12	3	
		NTC	Occ Health	1	3	2	1	1
		NTC	Allergy Clinic	3	1	3	0	2
		NTC	OB/GYN	20	2	20	3	

		NTC	Ophthalmology/PRK	3	1	6	3	
		NTC	Optometry	1	0	1	0	
		NAVSTA 32nd St	Mental Health	9	0	3	1	
lock 14	3-Aug-05	NAVSTA 32nd St	Industrial Hygeine	7	0	1	0	
		NAVSTA 32nd St	Audiology	3	0	1	0	
		NAVSTA 32nd St	PCC	15	3	49	1	1
		NAVSTA 32nd St	Medical Mobilization	1	0	8	0	
		NAVSTA 32nd St	Optometry	3	0	2	0	
		NAVSTA 32nd St	Occ Health	1	2	2	1	
		NAVSTA 32nd St	Physical Therapy	2	0	4	0	
		NAVSTA 32nd St	Preventive Med	0	0	2	0	
		NAVSTA 32nd St	SARP Naval Station	3	0	1	2	
		NAVSTA 32nd St	NEMPU	5	0	0	0	
		Miramar MCAS	Sickcall, Acute, Aviation Med (PE, Audiology, OSS)	38	0	60	10	1
lock 15	17-Aug-05	Miramar MCAS	Family Practice	6	1	6	5	
		Miramar MCAS	Midwife	1	0	1	0	
		Miramar MCAS	Preventive Med	0	0	2	0	
		Miramar MCAS	Developmental and Behavioral Pediatrics	5	0	2	0	
		Miramar MCAS	Industrial Hygeine	6	0	1	0	
		Miramar MCAS	Physical Therapy	2	0	3	1	
		Miramar MCAS	Occ Health	0	1	1	1	
		Chula Vista	TOC	19	11	9	23	20
		NI	Industrial Hygiene	8	0	2	1	
		NI	Audiology	0	0	10	0	
		NI	Occ Health	3	4	4	2	
		NI	Optometry	2	0	2	0	
		NI	PE/Aviation Med	9	0	14	1	
		NI	Physical Therapy	2	0	4	1	
		NI	Preventive Med	0	0	2	0	
		NI	PCC	4	2	4	0	
		NI	Records	0	7	5	0	
		NI	Sick Call	3	1	4	0	
lock 16	31-Aug-05	MCRD	BMC MCRD	28	3	66	4	2
		MCRD	Physical Therapy	2	0	4	1	
		San Clemente	BMC San Clemente Island	3	0	2	0	
		El Centro	BMC El Centro	3	0	10	2	
		NI	Acute Care	12	0	30	0	
		NAB Coronado	BMC Coronado NAB	6	0	18	0	
		Cimt Mesa	TOC	25	10	18	19	
lock 17	14-Sep-05	NMC	ER	41	32	43	19	

Appendix B

SUPERVISORY MEDICAL RECORDS ADMINISTRATION SPECIALIST

This position is located in the Outpatient Records Branch, Medical Records Division, Patient Administration Department. This position plans and directs the daily operational activities of the Outpatient Records Branch, which includes the Electronic Medical Records (EMR) Office.

MAJOR DUTIES STATEMENT

Directs and supervises 20 civil service employees (GS-3 to GS-6) and 10 contract personnel assigned to the Outpatient Records Branch. Provides technical advice to Branch Medical Clinics regarding medical record issues. Makes site assistance visits upon request.

Develops and implements policies, standards and procedures for the control and movement of the Outpatient Treatment Records (OTR) throughout the core medical center. Ensures that patient confidentiality is protected during these record movements.

Manages the OTR retirement process. This process requires interfacing with other U. S. Government agencies and other departments within the Command.

Manages the day-to-day operations of the Electronic Medical Records (EMR) Office at the administrator level including researching and resolving issues affecting the operation of the Armed Forces Longitudinal Health Record Treatment Application (AHLTA) and the EMR Office. This includes the ability to perform various EMR functions such as analysis, compiling data and retrieving and reviewing AHLTA data to determine completeness and internal consistency of the EMR.

Assigned as the Command Defense Eligibility Enrollment Reporting System (DEERS) site security officer. This includes requesting DEERS codes for staff personnel throughout the Command, the Branch Medical Clinics and other tenant commands.

Analyzes processes, identifies deficiencies, recommends and implements improvement and evaluates results.

Coordinates the training and the continuing education activities of Outpatient Records Branch staff members by assessing and

determining training needs. Provides orientation to newly assigned staff.

Establishes, coordinates and monitors the branch quality assurance and continuous improvement program. Advises staff on the methods of searching and retrieving health information for special studies, research, educational or accrediting purposes from the OTR and AHLTA.

Manages workflow to meeting production schedules and avoid backlogs.

Regularly provides advice and help to management on OTR and AHLTA requirements and standards issued by a variety of organizations such as JCAHO, BUMED, AHA and NMCSO.

Has authority to hire, propose personnel actions and assign personnel.

Determines staffing and equipment needs and makes recommendations to the chain of command as necessary.

KNOWLEDGE REQUIRED BY POSITION

Knowledge of regulatory, licensing and accrediting agency (JCAHO) for a teaching facility.

Knowledge of SECNAV, BUMED, TRICARE and NMCSO policies and procedures and all applicable statutes and legislation governing medical records/health information.

Knowledge of automated/electronic medical records/health information systems (CHCS, AHLTA and DEERS) requirements of the Privacy Act, HIPAA, Freedom of Information Act and NMCSO policies regarding the release of health information.

Knowledge of functions, responsibilities and relationships of the various directorates within the Command and the Patient Administration Department to assess and correlate data and verify information

Knowledge and ability to hire and supervise the Outpatient Records Branch including EEO program goals and objectives.

Knowledge of the goals, principles and techniques of medical record/health information administration, maintenance and disposal.

Ability to communicate orally and in writing effectively and professionally.

Knowledge of quality assurance techniques to assess and make recommendations for continuous improvement in the Outpatient Records Branch.

Knowledge of anatomy, physiology, and medical terminology.

Ability to assess and develop training needs of employees.

SUPERVISORY CONTROLS

The Supervisory controls are through broad, general objectives. The employee independently plans, coordinates and implements assignments within the context and constraints of policies and goals as they relate to the management of the OTR and the EMR. The supervisor reviews the work for meeting goals and achieving objectives in relation to policy requirements.

GUIDELINES

The employee must use judgment and initiative in interpreting the intent of existing guidelines and in developing new procedures and policies due to specificity of current ones to the work situation. Broad guidelines such as JCAHO accreditation requirements, State of California regulations, regulatory directives and administrative policies apply. In many areas, guidelines are very general and may require considerable judgment interpreting the intent.

COMPLEXITY

The work involves the full responsibility for the technical aspects of the Outpatient Records Branch. It includes a wide variety of duties involving diverse technical and administrative problems. Assignments involve a full range of operation problems involving aspects of medical records and EMR administration such as quality assurance, documentation requirements and release of confidential health information. Assignments involve a constant need for changes as a result of changing technologies, revised requirements or improvements in quality control systems or validation methods. The work requires changing the medical records/health information system to produce acceptable results, developing new and revised procedures. Assignments require independent action, knowledge and understanding of the full range of functions and responsibilities in the Patient Administration Department. The

work requires knowledge and action in determining the nature and extent of problem areas and developing recommendations for solutions. The work requires employee to be innovative in developing and implementing new or improved medical records/health information solutions to produce effective results.

SCOPE AND EFFECT

The purpose of this position is to perform a full range of medical records/health information administration tasks to resolve problems, questions or situations; and to plan, administer and oversee the implementation of standardized management and use of medical records/health information. It involves review and analysis of issues and operational processes and the formulation of recommendations on program improvements or changes to operation procedures to medical records/health information management goals and NMCSO objectives.

The work involves developing new or improved solutions to complex technical problems in the Outpatient Records Branch/EMR office, assessing the effectiveness of the branch, providing advisory and planning assistance; conducting analysis of specific functions that are of particular concern or difficulty. The work involves developing procedure manuals and guidelines for major branch functions.

The work contributes and influences the effectiveness and efficiency of the Command's medical records/health information program.

PERSONAL CONTACTS

Contacts and interdepartmental, Command wide, including health care providers, department heads and/or other management officials several levels above employee. Other personal contracts are with individuals outside the Command such as attorneys, insurance companies, law enforcement officials, other health care organizations and the general public.

PURPOSE OF CONTACTS

Contacts are to influence, motivate and negotiate issues with various individuals and groups to accept and comply with established policies and regulations. Work often involves participation in conferences, meetings or presentations with

individuals who may have diverse viewpoints, goals and objectives.

PHYSICAL DEMANDS

The work is primarily sedentary. There may be some walking, standing or carrying of light items such as records, manuals or files. The work does not require special physical demands.

WORK ENVIROMENT

The Outpatient Records Branch is a fast paced and busy environment. The work involves every risks or discomforts which require normal safety precautions type of such places as offices in a medical facility. There is forced air heat and cooling with fluorescent lighting and limited window views.

Appendix C

MEDICAL RECORDS TECHNICIAN, GS-675

This is one of several identical positions is located in the Outpatient Records Branch, Medical Records Division, Patient Administration Department, Naval Medical Center San Diego, CA.

MAJOR DUTIES STATEMENT

Performs numerous functions associated with imaging process of the Armed Forces Longitudinal Health Record Treatment Applications (AHLTA). These include but are not limited to prepping documents, scanning, indexing and the ability to perform electronic medical record (EMR) analysis for all patient types. Performs various EMR functions such as analysis, compiling data, scanning documents into AHLTA, retrieving and reviewing AHLTA to determine completeness and internal consistency of the EMR.

Routinely refers omissions and incomplete documents to responsible medical staff for correction.

Files incoming paper documents into medical records using the terminal digit filing system insuring that each document properly denotes complete patient identification data and the placement of each document within the medical record is in accordance with standing instructions, policies and JCAHO requirements.

Files returning medical records in the master files using terminal digit filing system. Replaces medical record covers when required insuring internal consistency with standing instructions, policies and JCAHO requirements.

Performs various paper medical records functions such as analysis, compiling data, retrieving medical records to determine completeness and internal consistence of the record; presence of all required forms and signatures. Refers omissions and incomplete documents to responsible medical staff for correction.

Pulls medical records for upcoming scheduled appointments utilizing CHCS 1 generated pull lists and outguides. Also pulls medical records for same day and stat appointments. Delivers medical records to clinics/requestors insuring that the person receiving the record **recharge** the record(s).

Interfaces with beneficiaries at the customer service counter or telephonically and registers them into Composite Health Care System (CHCS1) insuring demographic data entered is complete and accurate.

Makes new outpatient recording cards for beneficiaries using CHCS1. Fabricates new medical records in accordance with standing instructions.

Interfaces personally and telephonically with beneficiaries, staff health care providers, nurses, other hospital staff and outside health care professionals providing them with hospital/clinic information, medical records information and other information as needed.

Performs Defense Enrollment Eligibility Reporting System (DEERS) eligibility checks for staff members and beneficiaries.

Provides information regarding whom to contact for entry, correction or updating of DEERS data.

KNOWLEDGE

Knowledge of medical terminology and elementary practical knowledge of anatomy and physiology.

Knowledge of CHCS1 and0 AHLTA computer systems.

Knowledge of the Privacy Act, HIPAA, JCAHO standards as well as other regulations, instructions and laws pertaining the maintenance of medical records and electronic medical records.

Must possess skills to operate office equipment normally found in a medical record environment. Must possess keyboarding skills and be able to operate desk top computer (PC).

SUPERVISORY CONTROLS

The incumbent reports to the Supervisor, Outpatient Records Branch. In his/her absence the incumbent reports to assigned Lead MRT. Work is performed independently with minimal supervision in accordance with established procedures, instructions, regulations and guidelines. The Lead MRT prepares and posts daily work schedules, lunch and break schedules. The incumbent is required to use own judgment in the performance of daily tasks. Completed work is randomly reviewed to ensure completeness and accuracy. Technical assistance is available from the Lead MRT and Supervisor.

GUIDELINES

Supervisor or Lead MRT indicates procedures to be followed and specific medical records, EMR and administrative references to be used. Guidelines include but are not limited to JCAHO Manual, BUMED Instructions and Naval Medical Center San Diego Instructions.

Situations to which existing guidelines cannot be applied, or pose significant deviations from guidelines are referred to Lead MRT or Supervisor.

COMPLEXITY

The employee is responsible for scanning documents into AHLTA. The accuracy of this process is crucial to health care of beneficiaries.

Must have the ability to exercise mature judgement in the interpretation and application of instructions, guidelines and procedures. The employee must possess an extensive knowledge of the workings of the EMR and with the terminal digit filing system as correct filing of the medical record makes for prompt availability during routine and emergency medical situations.

SCOPE AND EFFECT

The employee has a vital responsibility for the proper entry of medical documents into AHLTA and the proper maintenance of the medical record. Because all care is record in these records, any failure or omission may have a substantial adverse impact on the patient and severely limit the health care providers ability to deliver quality, timely medical care. When this is not done, the process of recording patient care ceases.

PERSONAL CONTACTS

Employee interfaces with superiors, beneficiaries, co-workers in the Medical Records Division and the Patient Administration Department, physicians, nurses and other health care professionals within and outside the Command.

PURPOSE OF CONTACTS

To obtain work assignments, update instructions, policies and procedures from superiors. Deals with peers to maintain a harmonious working environment. Contacts with health care providers and beneficiaries are to provide EMR information, medical record information and availability.

PHYSICAL DEMANDS

Lifting up to 30 pounds. Must be able to frequently bend and stoop to floor level while filing. Must be able to reach above one's head and use step stools to filing records or medical documents in rows of files that can reach to a height of eight feet. Must be able to sit, operate office equipment and perform keyboarding functions for extended periods throughout the workday.

WORK ENVIRONMENT

High pressured and hectic. Many people working in a crowded area. Heavy workload, sometimes dealing with difficult people. Physical environment is forced air heat and air conditioning with fluorescent lighting with limited window views.

Appendix D

Manual of the Medical Department Chapter 16 Review Electronic Medical Record

16-2. Add...."electronic" formats to the end of the paragraph.

16-6. Major Medical Record Categories. Remove the Health Records (HRECs) and Outpatient Records (ORECs). These two can be combined into one category. Include the dental treatment record in this category.

16-7. Secondary Records. Change this verbiage so that Secondary Records are not allowed/discouraged except possibly for prenatal records until the L&D module is implemented, mental health and adolescent.

16-8. Indices, Registers, and Logs. "When possible indices, registers, and logs are to be maintained electronically. Exceptions would be when electronic systems are not available or in an emergency situation. Examples may be databases or spreadsheets. All personnel maintaining documents electronically must adhere to HIPAA security standards."

16-9. Security and Safekeeping. State that AHLTA is in compliance with HIPAA standards. All personnel must adhere to HIPAA regulations; those that do not will be dealt with accordingly.

16-10. Upon PCS check-out change to reflect current DoD policy of family members not hand carrying records. Paragraph (6) delete DEERS medical/dental records tracking. In paragraph (6)(a)(2) delete section re: PCS transfer info in DEERS.

16-11. Responsibilities. Include that Head, Pt Admin is responsible for administrative mgmt of medical information. In paragraph (5) include "HIPAA". In paragraph (9) state that MRC needs reps from clinical areas, PAD and IM/IT.

16-13. Preparation of Medical Record Folders. (1) (a) Until the entire command is using AHLTA, prepare a new paper HREC folder upon initial entry of a member into.....

Include this wording in subsequent paragraphs in this section for all instances when a paper record is opened.

(10) Cross-Servicing. If a paper record exists, the following guidance in Cross-Servicing should be followed. Do not create a paper record if the record is maintained electronically in AHLTA unless you know the receiving MTF does not have access to AHLTA.

16-15. Documentation in the Medical Record. (1) Handwritten Entries. Handwritten entries should only be performed when AHLTA is not available. Ensure handwritten entries are legible and recorded in black or blue-black ink.

(4) Computer-Generated Forms. (a) Filing of AHLTA forms in the medical record should only be done when the patient is Active Duty, copies of the record are required for further treatment, at the request of the patient, or PCS of the member when it has been verified that the gaining MTF does not have AHLTA.

Include information about creating templates in AHLTA. This team should consist of ITMD and coder representation for documentation purposes.

(7) Signatures. All AHLTA entries must be signed by a staff provider. For paper records, all entries must be authenticated....

(8) Countersignatures. Delete this section and combine above.

(10) (d) Electronic Signatures. Delete and combine above.

(10) (e) Copying (Transcription) of Laboratory and Other Data. Civilian hospital forms are approved for scanning into AHLTA and/or filing into paper medical records, do not transcribe this information.

(11) Recording of Diagnosis and Procedures for Coding Purposes. Providers will code their own charts when using AHLTA. Use of AHLTA templates will assist providers with coding. The physician must perform their own coding when free text is used. DoD coding documentation guidelines will be used. When using paper records physicians should record diagnoses.....

(13) Attestation Statement. A physician signature is no longer required.

16-20. Retirement and Disposal. Propose to BUMED that documentation in AHLTA NOT be printed and included in the retirement.

16-32. Drug and Alcohol Treatment Records. Include "adhere to HIPAA regulations". Also, include mechanism for patient to release drug and alcohol treatment records for non-TPO purposes that is within HIPAA regs.

16-34. Adolescent Clinic Records. Include statement that the provider must select "sensitive" on the AHLTA version when a sensitive issue is documented. If a sensitive record is copied the medical records clerk must verify that any sensitive documents must be an authorization for release. Management of these records is the responsibility of the Head of the Clinic.

Section VI Medico-Legal Issues

16-35. General. (1) Purpose - include HIPAA at the bottom of this paragraph.

16-36. Applicable Guidelines and Laws Affecting Maintenance and Disclosure. Include paragraph on HIPAA and explanation of scope.

16-37. Handling of Medical Information. Include HIPAA in all paragraphs (1) through (11), and (14 to (17). Specific recommendations provided below.

(1)(c) Rewrite paragraph: "Establish a procedure to ensure HIPAA regulations for all requests of medical records to command appointed investigators, the immediate superior in command (ISIC), other authorized medical inspectors, members of base security, or investigators for NCIS after verifying their identification."

Delete last sentence which alludes to no record is protected from NCIS.

(3) Rewrite: "The following information may be released if the patient has not opted-out of the patient registry, per HIPAA regulations."

(15) Release of information from secondary records. Rewrite 1st sentence "All information from paper secondary records, or sensitive documents in AHLTA, are done through the MRB, in coordination with the cognizant clinic or department. The majority of documents should be kept in AHLTA and the paper record phased out."

(16) Disclosure Accounting. Expand this section by adding specific information for AHLTA disclosures. Example, "When

releasing information from AHLTA, add all record disclosures on the clinical note section. Scan the HIPAA disclosure form, or any additional documents into AHLTA."

(17) Transfer or Distribution of Medical Records. (a) (1) Include: "When possible, records should not be pulled for routine appointments; instead AHLTA should be relied upon for the majority of the documentation." (2) Add: "Records of adults should not be hand carried by the sponsor unless authorized by the adult."

(c) "Family Member" Transfers. Upon PCS check-out change to reflect current DoD policy of family members not hand carrying records.

16-38. Entries by Health Care Professionals (HPs). (1) (a) consider revising: "The Health Care professional must ensure that notification is made to the individual concerned and the individual's CO."

16-39. Corrections to Entries. (1) Add: "For entries in AHLTA select the patient and go to the original note. Select Edit Mode and remove the error and where the error was. Type in the date of change and explain what was removed and why."

16-40. Amendments to Medical Records. Include HIPAA as a reference. Add: "Patients who wish to amend information in their medical records must submit a written request to the records office and clinical service for which they want the change. A correction can be done via the provider if approved by the clinical service"

16-41. Removal of Information. "Information cannot be removed in AHLTA. A correction can be done via the provider if approved by the clinical service."